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FIRST RUS

THE LONG GOODBYE

ot too long ago, my family was told that my mother had pancreatic cancer and that she had anywhere from three to six months to live. It was a brief moment that changed our lives forever, even though the consequences weren't immediately realized. It's odd how there was this feeling of slow disconnection as she became less and less aware of her surroundings, and we subconsciously became more acclimated to the thought that she would soon no longer be there. Somewhere along the way, she was gone before she even really died.

For some reason, I thought about that when choosing the theme for this month's issue: the consequences of a high-altitude electromagnetic pulse (HEMP) attack. Such a strike would render most of our technology inert. There would be no power, little, if any, transportation, and all the things we take for granted would no longer exist. Our current reality would be juxtaposed with an 18th-century setting in which modern conveniences, such as clean city water, drive-through windows and cellphones, no longer exist.

There will not be a massive fireball that causes tens of millions of deaths. It will simply be a momentary disruption that happens in the blink of an eye. In that miniscule bit of time, close to 90 percent of our population will be dead and won't even know it yet. Studies have shown that a technology-driven society such as ours will have an extremely high casualty percentage within one year as a result of a HEMP attack.

As a society at large, we no longer possess the same knowledge or skills our ancestors used to survive harsh conditions and maintain some modicum of existence. They didn't have electricity, wireless communications, computers, global food companies and the advantages of modern medicine. They had to pass their knowledge on

through the ages to get us where we are today ... and most of us simply don't know how to go back.

It will be somewhat of a long goodbye to our existence as we know it as disease spreads and family members fall ill for lack of proper hygiene or sanitation. It will take most of each day to find potable water, food and other supplies just to exist. There will be those who wish to take from others, so it will be de rigueur to constantly be on guard. It won't be an X-Box or car stereo they'll want to take, but the very food from your mouth that could ensure your survival. Are you ready for such a world?

Without the vast, technological infrastructure we have now, only those with the skills and knowledge to live off the grid and defend themselves will have a chance of making it. Even then, there are some things that are simply beyond our control.

Our government lists a HEMP strike as one of the top-tier threats to our nation because of the way we live. This is not fantasy. If you haven't started already, *now* is the time and place to start learning and developing your skills to be ready to deal with the worst-case scenario.

My one bit of advice for those starting off: Collect as many skills-related books as you can on topics focused on surviving off the land, including gardening, hunting, cooking, trapping and first aid.

You never know. There might come a day when Google isn't around, and you're all on your own.

Garrett Lucas, Editor

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SURVIVAL

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Fire, flood, hurricane, tornado, earthquake, terrorism, nuclear/biological/chemical, destruction, panic. These disasters present lethal challenges in daylight. They are compounded by darkness. Are you ready? TNVC is the only place to obtain all the necessary low light and no light gear to not only survive, but endure and prevail when disaster strikes. Don't be caught in the dark!

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LASERS

LIGHTS

HELMETS

MOUNTS



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REWOOLGTS

1

A First in the Field

Crossbow hunting is becoming ever more popular and is an excellent way to survive off the land silently without giving your presence away. But you still need to practice. BIGshot Targets has introduced the first archery/crossbow target rated for 500 feet per second. Introduced primarily as a crossbow target, the Extreme 500 target is designed not only to capture bolts at the higher rate of speed, but also still yield the bolts to the shooter with an easy pull.

Specifications

- · Rated 500 feet per second
- · Size: 24x24x9.5 inches
- · Weight: 64 pounds
- · Easiest to pull target
- · High Compression System

MSRP

\$149.99

URL

www.bigshottargets.com

2

New G5 Quivers

G5 Outdoors introduces both one- and twopiece Prime quivers to mate with the new Prime Bows with the Sherpa attachment system.

Both quivers are durably built to hold six arrows with shaft diameters of any size. They are designed to connect and disconnect quickly and will fit all new 2016 Prime Bows. Retro mounts are being built to fit the new Prime Ouivers to older model Prime Bows.

Available Finishes

- · RealTree Xtra
- · OptiFade Open Country
- OptiFade Elevated II
- · OptiFade Black

MSRP

\$149 (one-piece quiver) \$169 (two-piece quiver)

URL

www.g5prime.com

3

Enhanced Belly Band

To better address the needs of its audience, CrossBreed Holsters, with the aid of Rob Pincus of I.C.E. training, has redesigned its popular belly band by adding an extension to increase support and also add to the belly band's ability to carry larger firearms. In addition to the extension, the new Belly Band includes a back holster for a magazine and a larger pocket for keys or a cell phone. Also, it still works with modular components such as the Beside Backup, Purse Defender and the Pac Mat.

Available Sizes

- · Small: 29- to 36-inch waist
- · Medium: 36- to 42-inch waist
- · Large: 42- to 52-inch waist

MSRP

From \$69.95 (with holster)

URL

www.crossbreedholsters.com

4

XS Novak Suppressor

For those folks who work with suppressors, XS Sights has just added a new product to its line that might be just what you need for your 1911 pistol

The new Novak Suppressor-Height 1911 Express Sights offer a low profile and a snag-free design. They are available in either the Big Dot or Standard Dot configuration, which allow for quick target acquisition in all light conditions. The sights are similar to other Express Sight models but are designed for a straight-line view over an attached suppressor.

Specifications

- Front sight: 0.330 inch x 65 degrees x 0.075 inch dp
- · Rear sight: 0.495 inch x 65 degrees

MSRP

\$105-\$135

URL

www.xssights.com

5

New Spyderco Sprig

Sometimes, you have to step back from the bushcraft stuff and the large choppers to focus on the little things: fish and small game. Spyderco has just introduced its new Sprig model, designed in conjunction with Phil Wilson, who based the design on one of his most popular bird-and-trout designs.

The Sprig's blade comprises S90V steel, which has incredible wear resistance. This means the Sprig will wear a sharp edge for a very long time. Forest Green G-10 handle scales adorn the full tang and give a sure grip when working in slippery or wet conditions.

The Sprig comes with a full flat grind and a distal taper and, for easy retrieval, it's carried in a Boltaron sheath with a G-clip attachment that offers multiple carry positions.

Specifications

- · Blade steel: S90V
- · Overall length: 8.68 inches
- · Blade length: 4.25 inches
- Blade thickness: .118 inch
 Handle: G-10 (Forest Green)
- · Blade grind: full flat

MSRP

\$299

URL

www.spyderco.com





DEW DUCTS 11 Meopta Adds

A New Hunting Companion

Ultimate Wild has just introduced its new H-TAC 750 LED flashlight for those tracking blood trails in the gloom or just needing a high-output light for the field in general. Made of aircraft-grade aluminum, the H-TACT 750 has a black anodized finish and a push-button switch featuring settings that include high output, low beam and tactical strobe. The H-TAC 750 can use either four CR123 batteries or two 18650 lithium hattorios

Specifications

- Length: 10 inches; Weight: 8.7 ounces
- Body diameter: 1 inch: Bezel: 1.8 inches
- Run time: 1.5 on "high"
- Includes: battery, stainless steel strike bezel, extra O-ring, clip
- Special modes: SOS, medium (100 lumens), beacon (high), beacon (low)

MSRP

\$99

www.ultimatewild.com

Primaloft Outdry Glove

For those cold and wet days you are out hunting in the field. Browning has introduced the Primaloft Outdry Glove in Mossy Oak Breakup Country Besides keeping your hands warm in extreme weather, they also keep your hands dry with their waterproof and breathable Outdry membrane. Elasticized wrists and pre-curved fingers make these gloves especially comfortable to wear in the field. The digitally enhanced, life-sized elements in the glove's Mossy Oak Breakup Country finish help minimize signs of movement by your hands as you're getting ready for the kill. These gloves are great additions to a hunter's equipment and will help them get "lost" in their surroundings.

MSRP

\$120

www.browning.com

Fast-Opening Defensive Tool

Kershaw and Ernest Emerson collaborated on the design of the new Kershaw Launch 5 automatic knife to provide a rapid-response, defensive knife when seconds count. The Launch 5 automatic knife sports a CPM 154 blade with a stonewash finish. This powdered-metallurgy steel provides a host of benefits, including corrosion resistance, good edge retention and toughness. The Launch 5 has an aluminum spacer and handles to help decrease weight, and its pushbutton mechanism is recessed into the handle to avoid accidental opening.

Specifications

- · Reversible pocket clip
- · Blade material: CPM 154
- Handle material: anodized aluminum
- · Blade length: 3.4 inches
- · Overall length: 5.1 inches
- · Weight: 4.1 ounces

MSRP

\$179.99

IIDI

www.kershaw.kaiusaltd.com

Zero Tolerance

Zero Tolerance and Les George are at it again with the introduction of the model 0909, which has its ancestral roots in George's original FM-1. It's all about the curves with the 0909, whether it's in the blade profile or the scoops in the middle of the handle. Like other Zero Tolerance knives, the model 0909 is a beefy, robust knife that will handle whatever you throw at it. It incorporates extra-thick liners, a strong liner lock, G-10 handle scales and tops it all off with an S35VN blade that is tough, corrosionresistant and holds its edge.

The pocket clip is reversible, so lefties can get in line to take home a quality knife that will last them a

Specifications

- · Closed length: 4.76 inches
- · Blade length: 3.8 inches
- · Blade steel: S35VN
- · Handle: G-10
- · Opening system: KVT ball bearing

MSRP

\$279.95

URL

www.spyderco.com

6.5-20x50mm Scopes

Adding to its already popular line of scopes, Meopta introduces both the 6.5-20x50mm and 6.5-20x50mm HTR scopes. The standard version (with capped hunting turrets) is for long-range hunting of large game or varmints, while the HTR version (with open turrets) is for more-precise work at the range or in tactical environments Four reticles are available: the Z-Plex, BDC, McWhorter HV and Windmax8. The scope includes a side turret for parallax adjustment. Both scopes include multicoated MEOBright lenses with SCHOTT glass. They are fog- and waterproof. Three and a half inches of eve relief are available, and 1/4-inch MOA adjustments can be made for

The scopes come with a lifetime transferrable warranty.

Specifications

· Magnification: 6.5-20X

elevation and windage

- · Tube size: 1 inch
- · Eve relief: 3.5 inches
- · Objective size: 50mm
- · Focal plane: 2nd
- · Length: 15.6 inches · Width: 21.83 ounces

From \$1092.49

URL

www.meoptausa.com











WHAT IS A HEMP?

When you think of "HEMP." it's important to understand this form of nuclear attack causes mass destruction without directly harming people—at least, not right away. The result of the detonation of a nuclear device high in the atmosphere and then amplified by the ionosphere, a HEMP is an electromagnetic energy field that covers the line of sight below detonation. It will damage electronic equipment and electrical systems over an expansive area. This can result in a cascade failure of the power grid, water treatment centers. gas refineries, and transportation and communications systems.

In a report titled Nuclear Weapons EMP Effects, The Federation of American Scientists noted that under the correct conditions (related to both the type of device and the altitude at which it is detonated), a nuclear explosion over Kansas could affect the entire continental United States. Wires and other metallic conductors, overhead power lines and more could serve as antennas to conduct the energy shockwave into the electronic systems of communications equipment, cars and airplanes. In fact, in 1962, the United States conducted a HEMP test over the Pacific Ocean that caused disruption to radio stations and electronic equipment 800 miles away in parts of Hawaii.



 ⟨ Aside from
 | communications systems being down, personal digital devices will also cease to function if they are not shielded. The more delicate the circuitry, the more susceptible it will be to a HEMP.

HOW IT WORKS

According to a report for Congress, High Altitude Electromagnetic Pulse (HEMP) and High Power Microwave (HPM) Devices: Threat Assessments, a HEMP-inducing nuclear explosion causes three "energy components" that produce different effects that can together damage electronic equipment. First comes the shockwave, which lasts only 1 microsecond. This first energy component is comparable to extreme static electricity. It can overload the circuitry to electronic devices within the detonation's line of sight.

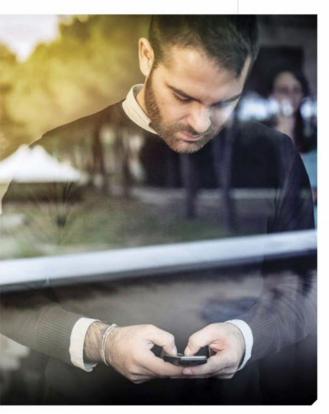
The second energy component, which is comparable to a lightning strike, follows. Alone, this second pulse might not damage infrastructure that has already taken protective measures against lighting strikes. However, because the first energy component strike is so intense and quick, it can possibly destroy those protections and thus allow the second energy component to be more destructive, according to the congressional report, which was last updated in 2008.

The final energy component is a "magnetohydrodynamic" signal that can last from 1 microsecond to many seconds and damages long lines of electronic equipment. Within

"ANYTHING THAT IS CONNECTED TO THE POWER GRID DURING THE BURST WILL LIKELY BE RENDERED **USELESS.**"

the component are two parts, referred to as "blast" and "heave," according to the report. When the expanding and conductive fireball warps the earth's magnetic field lines, a blast occurs. Next, the heating and ionization of a piece of atmosphere below the fireball rises and distorts the earth's magnetic field, causing the heave.

The fireball continues to expand. On the ground, a "localized magnetic effect" builds before it quickly collapses, causing another "power surge" that can overload electrical equipment connected to the power grid and telecommunications infrastructure. This can spread more damage through connected communications systems and long-lines power, the report says. (Smaller, isolated systems aren't disrupted as much by the third energy component but are still damaged by the first energy component.) This third energy component depends on the nuclear detonation's total energy and might not occur with smaller nuclear weapons.



WHAT ARE THE EFFECTS OF A HEMP?

If someone wants to strike the United States with a HEMP attack, let's assume they do so with a strong enough device at a high enough altitude to wipe out the entire country's power grid. Although this will not cause immediate harm to humans, the explosion will disrupt most (but not necessarily all) electronic devices and equipment. Anything connected to the power grid during the burst will likely be rendered useless. This means electricity and electronic communications will likely no longer function.

In addition, anything that operates using computer chips—from small electronic devices to modern vehicles-might be damaged. Although it's possible that some electronic devices or carriers will not be destroyed, the disruption will be widespread, particularly because electronic infrastructures are interdependent.

WHAT THAT WILL MEAN

Phone networks will not work. Even if your cell phone turns on, you will not be able to reach anyone. It will be difficult to find people who aren't in your immediate vicinity without phones to communicate. And, if modern vehicles that run using electronic ignition and control systems are blocking the roads, it will be difficult to travel to look for people (not to mention dangerous. But more on that later).

"WHEN YOU THINK OF 'HEMP,' IT'S IMPORTANT TO UNDERSTAND THIS FORM OF NUCLEAR ATTACK CAUSES **MASS DESTRUCTION WITHOUT** DIRECTLY HARMING PEOPLE—AT LEAST, NOT RIGHT AWAY."





Power lines and other interdependent communications infrastructures will be damaged by a

If the country is hit by a widespread HEMP attack (and order is not immediately restored), everything in our day-to-day lives will change.

Many people tend to have only a few days' or weeks' worth of food and water in their homes. Initially, people might take what they can from grocery stores, but anything that needs to be refrigerated will not be edible for long. Canned and non-perishable food items will be snatched up quickly.

Gasoline, kerosene and everything else made from crude oil comes from an oil refinery, which needs electricity to do the job. Without gas, delivery trucks cannot bring food to grocery stores (that is, if the trucks aren't already useless because their electronic parts are damaged). Farmers might be able to keep cultivating crops, but they won't have a way to get them to customers

Trucks, trains and other transportation, for the most part, won't work or will not be available. The same goes for water and water supplies. Although the planet has an abundance of water, the supplies you use to get water from sources and what you use to treat it to make it safe to drink are limited. And people might not be willing to share. Expect to see many people die from starvation and dehydration.

People who use medicine (such as insulin) that needs to be kept cool will need to find other places to store it, rather than in refrigerators. Those who need medicine or constant care from a doctor or depend on medical devices to live will die quickly. This is even before accounting for the lack of sanitation, which will cause diseases to spread.

It is possible hospitals will become FEMA-like camps. If so, if a sick person can get to one, it's possible he or she will get the help needed to survive. But chances are that many people will not.

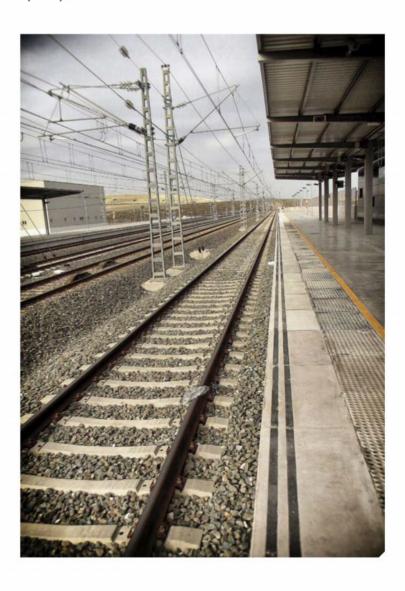
Banks will shut down without their electronic records. Cash will quickly become a thing of the past. People will have to resort to bartering goods and services. Many people who have found success through enterprise, opportunity or whatever other advantages afforded in modern living will find their skills, for the most part, useless in this new, 19th century-like world. Those who keep their wits about them might be able to survive—at least, for a while.

Once mass starvation and the spread of disease become prevalent, life, as we know it, will change. And when that happens, people will change; some might do

> Without the availability of oil or gasoline processing and distribution, personal travel will eventually be limited to slower methods that will keep trade at a more local layer.



anything to survive. If you have food, water, medicine or weapons to protect these items, consider yourself a target for theft (or worse). People who want what you have might try to kill you.



LIVING IN A NEW WORLD

If a HEMP attack took place, as more and more systems and modern facets of living became obsolete over time, life could revert to what it was like for people living in the 1700s and 1800s. The lives of people back then looked much different from what civilization is like now.

The first priority for life post-HEMP attack will include finding water, if you do not already retrieve it from a well or other source. If you have to get your own water, retrieving and transporting the many

"IN THIS NEW WORLD. YOU **CANNOT COUNT ON ANYONE ELSE** TO PROTECT YOU OR YOUR FAMILY."



 Lawlessness may become the new reality after a HEMP attack



With everything in short supply, and with governmental services being nonexistent, it will be up to the individual to protect their family and their supplies

gallons of water everyone in your household uses daily will take time and energy. As things stand now, the average person uses about 80 to 100 gallons of water each day, according to the U.S. Geological Survey (USGS). Much of that comes from flushing toilets and taking showers and baths. So. without toilets and showers. water use might be less—but it's still going to be a lot.

Groundwater from wells is typically filtered through rocks, according to the USGS, so it may not have pathogens in it, but it could still contain chemicals. Surface-water sources such as rivers, lakes and reservoirs also contain water that needs to be filtered. So, in addition to boiling water, it will be a good idea to get your hands on a water purifier if you don't already have one.

In this new world, you will not have grocery stores, and you will not be able to depend on farmers far away, because they will have no way to easily transport their food. People will have to farm for themselves or hunt and gather, unless and until someone who is able to do so effectively sets up a shop (more on that later). Aside from nuts and plants, food will perish quickly without refrigeration, unless you learn the proper ways to prepare food for longer storage.

Aside from not being able to shower, you will also eventually have to forgo hygiene products such as shampoos, deodorants and more. And without running water,



> Civilization might revert to a time when people had to do more things for themselves.



 The spread of disease could be one of the consequences of losing access to the power grid.

> Although modern transportation will no longer exist, older inventions and technologies, such as the steam locomotive or horse-drawn conveyances, could be useful again.

getting rid of human waste will become necessary. Many diseases can be spread if feces or urine contaminate the water. Animals and animal waste can also contaminate it. Without regular means of sanitation and medicine, diseases will most likely spread.

Finding a doctor near enough to help quickly will be problematic. However, say you do find someone with medical expertise, such as a doctor or nurse. That person will need to depend on whatever might be available, such as medicinal plants or old-world medical treatments. You may need to give this person an



incentive for this. Without money, that will mean trading goods and services.

Enterprising people will likely set up shops and farmers' markets. People could get by living as rural farmers did in the 18th century. Textile factories and other businesses thrived in those times-and could again after a HEMP occurs.

Before electricity, other technology was used for transportation—such as steam locomotives, which derive power from a steam engine that runs off coal and water. Steam carriages and other vehicles of the sort could become sources of transportation again; or people might travel by horses and horse carriages.

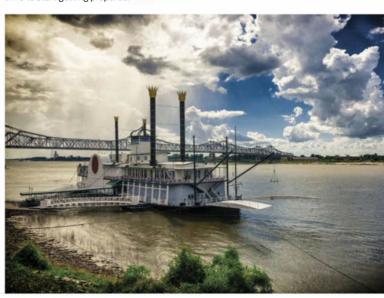
But don't forget: Whatever you have that other people want is something that causes risk, because it could be taken from you ... violently. Whatever the government's plans are to protect against a HEMP's damaging consequences and restore order might not be effective. So, in this new world, you cannot count on anyone else to protect you or your family.

A HEMP attack might not kill people immediately but, if carried out, it could result in widespread death in the United States. People who are dependant on

modern medicines and doctors, as well as those who are unable to get water and feed themselves, keep warm or cool, and protect their families from thieves and murderers could lose everything.

Many countries have access to nuclear weapons that could make this scenario a reality. So, if this occurs, there are some serious questions you need to ask yourself: If a HEMP attack occurs, will I know what to do? Am I ready for the world that will follow? Do I have what it will take to survive?

If you don't know the answers to these questions, the answers are all probably "No." It's time to start getting prepared. ASG



(Population enters would once again see more trade activity along the waterways because of long distance travel powered by steam engines.

◀ If a HEMP attack happened (and the government did not restore order). as more and more systems and modern facets of living became obsolete over time, life could revert to what it was like for people living in the 1700s and 1800s











red liners beneath the **A DISTINCTIVE** is large enough to accommodate a small sharpening stone or even a small knife. STYLE AND IS In other scenarios, the pocket could hold **WELL DESIGNED** a container for small items that would be very useful in a desperate situation. FOR ITS INTENDED The sheath furnished with the Punk **PURPOSES.**" is versatile with regard to how it is attached to a belt or pack. It is compatible with the modular lightweight load-carrying equipment system designated by the acronym, MOLLE. That system has numerous attachment points for adding items of equipment to the carrying [THEASG.COM] AMERICAN SURVIVAL GUIDE 23 harness. Alternatively, the sheath can be carried in a conventional manner on a belt.

OUTSTANDING PERFORMANCE

Right out of the box, the Punk was very sharp, but it did not take long to determine that it could be a bit sharper. I used a favorite stone to make it "shaving sharp" in short order.

With many products, including knives, there is a subjective quality that is sometimes described by the word "feel"; that is true of the Punk. Even though the Micarta scales do

"I WOULD NOT HESITATE TO TAKE THE PUNK TO THE WOODS AS MY LARGE EDGED TOOL."



not have the tactile feel of Kraton or the eye appeal of leather or wood, the Punk is easy to hold during use. And because the handle has a cutout section that is covered by the scales, the knife has a weight-forward balance, but not excessively so.

I carried the Punk with the sheath attached to my belt in the conventional vertical manner. It carried well, but the two different types of retainers made the knife somewhat slow to remove. In a variety of operations, the knife performed in an excellent manner. I used it to cut branches, shave kindling and split firewood.

All in all, I would not hesitate to take the Punk to the woods as my large edged tool. I would, however, also take along a small folding lockback model for small tasks.

The Buck Punk is a fine knife and an excellent choice for general camping and field use and/or as a necessary item in a bugout bag. When complemented by a folding saw for cutting really large materials, the Buck Punk is an outstanding survival knife.

The Punk is made in the U.S.A. and has an MSRP of \$200. (However, it is frequently available for about two-thirds of that price.) **ASG**

The Punk showed it could handle a wide range of tasks for outdoors use.

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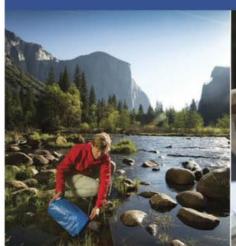
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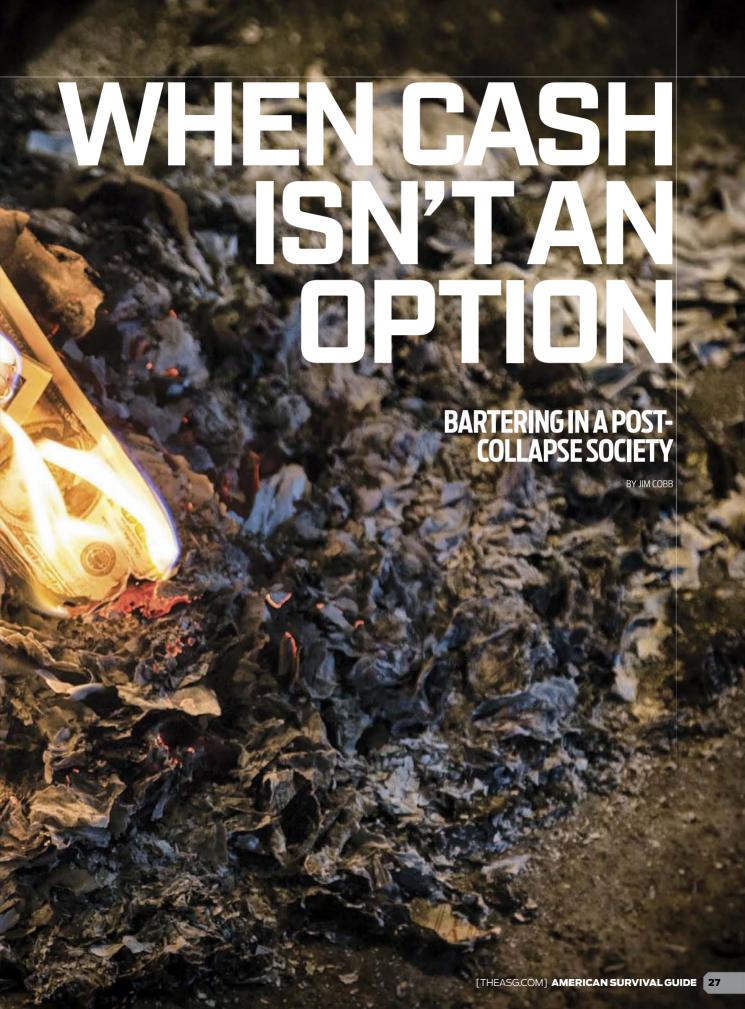
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n the list of topics that fall under the survivalist umbrella, bartering might not hold the top slot but is surely in the top 10.

The basic concept runs like this: In the event that our current forms of currency are suddenly worthless due to an economic collapse or some other long-term disaster, We may want to have on hand a small stockpile of goods we can use to trade for other things we need.

Sure, we're survivalists, so we should be well stocked with food, water and such. But we're also human, and thus, we aren't perfect. We might not have stored enough of this or that. Perhaps we even completely forgot about something that turns out to be critically needed.

What we'll have available for trading tends to fall into two different categories: stuff and skills. "Stuff" refers to the physical, tangible items we can stockpile in advance of a collapse. "Skills" are the iobs we could perform in exchange for goods or services. Each category has pros and cons, and a savvy trader will have invested in both.

There are three basic rules I try to follow when determining whether an item should be stockpiled for later trading. First, the item should have some inherent value to me. I may never need to use the item for bartering, so it should have some use for my family and me. In other words, don't invest in items for the sole purpose of trading them later. Should civilization and/or the economy stabilize, you might



find you've wasted your money buying things for which you have no use.

Second, the item must store well for long periods of time. Perishables don't make for good trading fodder, except in the short term. While you may find people eager to trade with you after you've harvested a deer, unless you have the means to keep that meat fresh for more than a couple of days, you're not looking at any sort of long-term trade currency. Your chosen trade goods should be shelf stable and require little to no maintenance to remain viable for years to come.

Finally, your trade goods should be both inexpensive now and likely to have high value later. It is like the old axiom when it comes to the stock market: Buy low, sell high. As was mentioned earlier, it makes very little sense to sink a ton of money into barter goods if you end up not needing them for trade later.

Keep in mind that every dollar you spend on barter goods is one less dollar you can spend on food, water, medicine and other essentials. Prepping is a balancing act—ideally, the items you choose to stockpile will not impact your wallet very much and will have tremendous trade value down the road.



"YOUR CHOSEN TRADE GOODS SHOULD BE SHELF STABLE AND REQUIRE LITTLE TO NO MAINTENANCE TO REMAIN VIABLE FOR YEARS TO COME."

BARTER GOODS

With all that in mind, what are some recommended barter items?

For consumables, give thought to the things people will want and need but likely won't have on hand in large quantity, such as salt, sugar and honey. Each of those will last essentially forever without any special storage requirements. Drink mixes will also be prized once people have run out of soft drinks and other packaged beverages. Heirloom seeds are truly a long-term investment but well worth the expense should the disaster aftermath be measured in years.

After just a short time without them, toiletries such as soap and shampoo appreciate exponentially in value. Anything that will help people feel "human" again will be highly prized. If you travel regularly, be sure to snag the complimentary goodies in your hotel

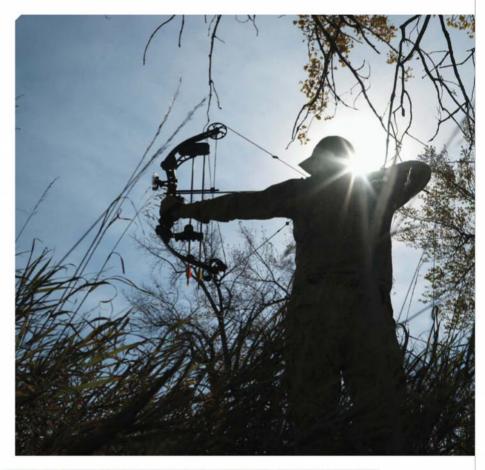
"IN MANY WAYS, IT IS PREFERABLE TO BE ABLE TO TRADE YOUR SKILLS RATHER THAN YOUR STUFI

room, because they might make excellent barter goods later. Toothbrushes and toothpaste can be had very cheaply if you shop around.

Along those same lines, hygiene supplies will also be popular. Toilet paper (if you have a roll or two you can spare) will be like gold. Feminine hygiene products will also be highly sought after. Don't overlook medications for yeast infections and other feminine ailments, as well.

There are all sorts of odds and ends that make for excellent barter material. Butane lighters don't last forever, but if you stick to the name brands, you'll get a fair amount of storage time out of them before they run dry. Strike-anywhere matches, if you keep them dry, last quite a long time, too, Nails, screws and other fasteners will be handy to have when it comes time to start rebuilding.

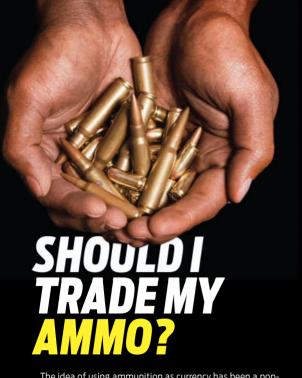
When running to the store to pick up a new pair of pants isn't a viable option, people will find a great need for patches, needles, thread and other clothing repair items. Granted, lots of folks face a rather steep learning curve to be able to use those items effectively, but if you can at least provide the supplies, they'll be a step ahead.







Skill at finding what you need to survive will not only keep you alive, it will possibly give you surplus for trading, as well



The idea of using ammunition as currency has been a popular one for quite some time. I agree with proponents who say ammo would be easily standardized for trading, and there would be a high demand for it. However, my concern would be the person deciding to return their ammunition to me—using some sort of high-velocity delivery system.

My recommendation is that ammunition should only be traded with those whom you trust absolutely.

And even then, use caution.

BARTER SERVICES

In many ways, it is preferable to be able to trade your skills rather than your stuff. Unlike trade goods, your talents and skills won't run out. Plus, they don't take up any space at all, and you can carry them all day long without getting tired! That said, most skill sets will require the use of tools, equipment and supplies that will all need to be stockpiled.

First and foremost, any medical skills will be highly valuable. Obviously, the higher up the food chain you are, the better the service you'll likely be able to provide (such as an experienced nurse practitioner compared to a Red Cross first-aid class graduate). I highly recommend spending time learning natural remedies, as well, such as wild medicinal plants and such. The local pharmacy might not be an option.

The means filtering and disinfecting water will be absolutely vital if the water isn't flowing from the taps. Most people can make do with using old T-shirts or bandanas for the filtration part of the process, but those items won't do much of

Woodcraft skills, as well as other trades such as plumbing and electrical, will be sought after by those who can't perform necessary structural repairs on their own.

Water is necessary for survival, and few people will know how to filter or purify it after a disaster strikes. "WHAT WE'LL HAVE AVAILABLE FOR TRADING TENDS TO FALL INTO TWO DIFFERENT CATEGORIES: STUFF AND SKILLS."





anything to eliminate parasites and other microscopic nasties. If you've invested in water filters for you and your family to use, you would probably have success trading your ability to make water potable.

If you have skill in providing food through hunting, trapping, foraging, gardening or some other means, you'll be able to trade some of your bounty for other things you need. Experience in processing the harvest will also be sought after by those who lack it.

Any of those skill sets we refer to as "the trades"-carpentry, plumbing and electrical—will be useful in many cases. Of course, you'll need the tools and supplies to make the repairs and such, but what you lack could probably be borrowed or scavenged. If the crisis runs unabated long enough, those with experience in what is termed "pioneer skills" (such as blacksmithing) will find there is plenty of work to be had.

If there is one person in the community who likely will never go hungry, it is the one who can provide the hooch. Learning distillation and home brewing takes time and no small amount of trial and error. However, once you've mastered it, your product will probably be in high demand.





If there is one person who will probably never go hungry, it is the one who can provide the hooch

As time goes larger scale.

the negotiation skills you learn and hone right now might also come in handy if the future unfolds in an unexpected way. ASG

BARTERING IN THE COMMUNITY

In the first few weeks, bartering will probably be limited to trading with neighbors, family and friends. A cup of sugar for a cup of flour might be the starting point. As times goes on, and with no end in sight, the town might find it useful to set up some sort of central location for trading, such as the high school gymnasium or a local park. This provides a safer way to conduct transactions, rather than just a couple of people on their own. In addition—and just as importantly—it will provide a sense of community among the residents, which could be vital to the successful recovery of the town.

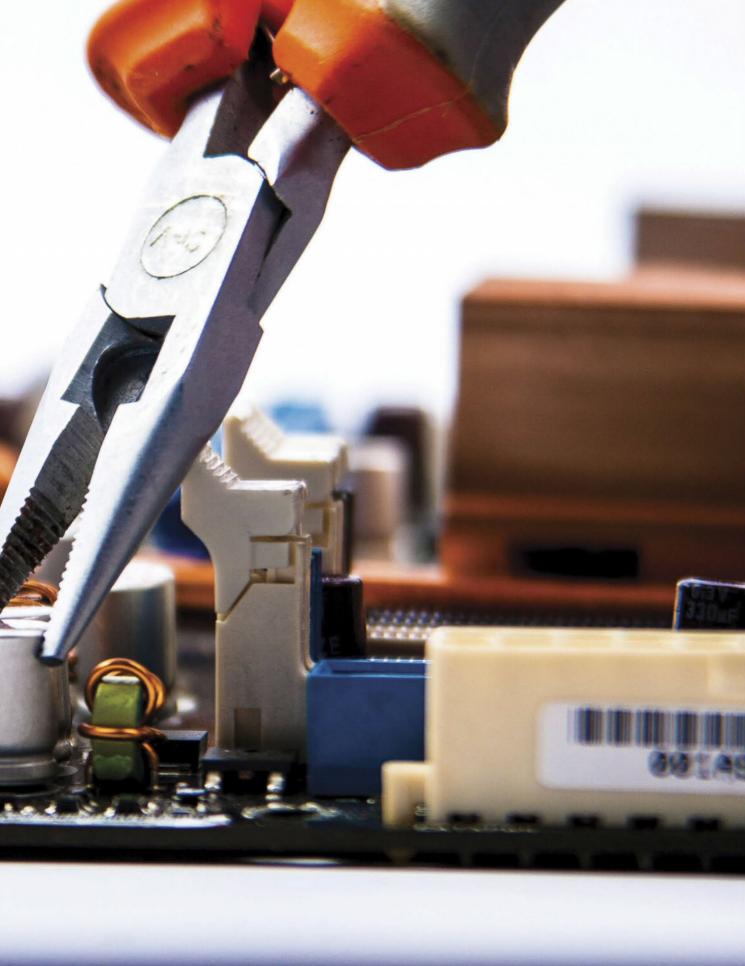
We often engage in barter today, although we might only think of it as doing a favor for someone who returns the favor at some point down the road. It would be well worth your while to explore the notion of trading and bartering on a

Not only can bartering save you money,

SHELDS UP!

PROTECTING ELECTRONICS AND RADIO EQUIPMENT FROM AN EMP

BY JIM JEFFRIES





of hot plasma called "coronal mass ejections" (CME). Most of them are blown harmlessly out into space. However, when one hits Earth directly, the immense energy in the CME strongly affects our planet's geomagnetic field, causing it to distort violently and resulting in rapid changes in the magnetic flux lines.

out enormous clouds

Nuclear weapons, specifically designed to convert atomic energy into gamma radiation, are in the arsenals of several nations, and the possibility of a rogue government developing such a weapon increases every day. The threat is not in the blast, itself; it comes from the release of energy interacting with the molecules and atoms in the air.

At the moment of detonation, the radiation will ionize these particles, placing them in an extremely high electric state, immediately creating a strong electric field. In under a second, these particles will begin to lose their charge, and the electric field will reverse—collapsing back on itself just as quickly as it began.

Either of these rapidly changing magnetic or electric fields will create electromagnetic waves that propagate outward at the speed of light—that is, an EMP.

"AN EMP CARRIES NO MASS, COMES WITHOUT A SHOCKWAVE AND IS INVISIBLE. BUT ITS EFFECTS ON ELECTRICAL SYSTEMS AND DEVICES CAN BE DISASTROUS."

THE EFFECTS OF AN EMP

The EMP carries no mass, comes without a shockwave and is invisible, but its effects on electrical systems and devices can be disastrous. An electrical conductor such as a high-tension power line, when placed in a fluctuating electromagnetic field, will produce a current (through a phenomenon known as "induction") that will be carried along the

In the case of our power grid, this current might be many times what the lines usually carry, and when this surge of power reaches anything connected to the grid, it can have devastating results. The entire electrical infrastructure, including every transmission line, substation and transformer, is susceptible to a power surge; much of it will be damaged beyond repair. With little or no warning, the lights could go out—indefinitely.

PROTECTING YOUR GEAR

Protecting electronic devices from damage requires that they be disconnected from the electric grid. Just as lightning (a localized form of an EMP) can enter a home through the electrical wiring, rendering appliances such as the refrigerator and television useless, the surge caused by the EMP and carried to the home by the power lines will find its way to every electrical outlet. In addition, they must also be electrostatically shielded from the pulse, itself.

If an electronic device is completely enclosed in a conductive container, the electromagnetic pulse is blocked by the surface of the container. Just as the shielding in a microwave oven keeps microwave energy (which is electromagnetic energy) confined to the inside, a completely enclosed, electrically conductive metal box will keep electromagnetic energy out.

Most amateur radio equipment is designed to function in high electromagnetic fields (either because they generate those fields or were designed to work in conjunction with those that do) and incorporate substantial shielding in their designs. This might make them fairly immune to the effects of an EMP, but any conductors that lead in or out of the equipment might penetrate the shield.

Antennas will certainly pass some energy through the coax directly into any devices to

power leads and feed lines is required to protect the equipment from a strong EMP.

Shielding is accomplished by surrounding the item in an electrically conductive enclosure, creating an electrostatic barrier commonly called a "Faraday cage." This cage can be as simple as placing the item inside a large metal can, such as a galvanized steel trash can, and ensuring the lid makes good electrical contact all the way around.

Surplus steel ammunition cans are good candidates for making an electrostatic shield. Many sizes of ammunition cans can be found at surplus stores or gun shows and are usually fairly inexpensive.

However, an ammo can must be modified slightly to convert it into a suitable electrostatic shield: The sealing rubber gasket must be removed from the lid and

BA

> Spare electronic equipment can be stored in the original package ing inside larger, galvanized steel trashcans. Make sure the lid fits tightly and that any perforations (such as handle attachments) are covered with electrically conductive material such as silver conductive tape



shielding



"KEEPING YOUR STATION EQUIPMENT OFF THE POWER GRID WILL ELIMINATE HALF THE THREAT, AND MOST RADIOS SHOULD PROVE TO BE OUITE RESILIENT TO THE PULSE. ITSELF."

then modified, and the paint underneath it must be removed by scraping or sanding.

Use conductive aluminum tape (the shiny metallic type used for sealing ventilation ducts) and fold it around the rubber gasket (sticky side to the gasket, itself), and then reinstall the now-conductive seal into the lid.

Finally, scrape or sand the paint from the mating surface of the can and reinstall the lid. Close the lid a couple of times and check for an indentation in the tape-covered gasket to verify a continuous seal.

When placing items inside the container, many people wrap the item with layers of aluminum foil followed by a layer of nonconductive material (such as plastic) to further protect and insulate it from the inside of the can. Some take the extra

step of connecting a ground wire to the outside of the container. If nothing else, these added precautions will provide extra peace of mind.

If grounding the container, connect the ground wire to a separate dedicated earth ground—do not connect it to the home's electrical ground or to the plumbing, because these could feed a surge directly to the container. If the ground wire is more than a couple of feet long, it might be best not to use a ground at all. In addition, remember to place a desiccant pack inside the container to protect against moisture.

Items too large to be placed in a container can be left in their original packaging, but wrap multiple layers of aluminum foil around the outside. The foil edges should overlap to ensure electrical continuity. Finally, a layer of plastic (plastic wrap, heavy-duty trash can liner or similar) can be placed over the foil to protect it from tearing.

Any electronic items that are out in the open will likely be exposed and vulnerable to a possible EMP. Keeping your station equipment off the power grid will eliminate half the threat, and most radios should prove to be quite resilient to the pulse, itself. If you also follow the common practice of disconnecting antenna feed lines when the radio is off and unattended, you will prevent any energy from entering along that route.

FINAL NOTE

Batteries should show no negative effects from an EMP, and many solar panels have taken direct hits from lightning and continued working just fine. Nevertheless, it doesn't hurt to have spare panels on hand that are protected during such an event in case there is damage to currently installed panels.

Even if the power grid fails, there will still be plenty of power available for prepared ham radio operators.

In the event of a HEMP, you probably won't be able to get in touch with your insurance agent, so be sure to have spare equipment stored in a protected manner to help you get back on the air and make contact with the outside world. **ASG**

Reinstall the seal in the lid. Once the lid is secured on the can, the conductive tape becomes a path for any electric current. As long as all external surfaces are electrically connected to each other, no difference in potential can exist, meaning that no electric field will be created inside the enclosure.

**CAdding a layer of insulation between the items and the inside of the contract of the can be items and the inside of the contract against can be contracted against corrosion resulting from any moistoning during storage and transport. A couple of desictant pouches will help protect against corrosion resulting from any moistoning that the contraction of the contrac

Remove the rub-

ber gasket from the lid of the ammuni-

tion can and sand

or scrape the paint to expose the steel

underneath



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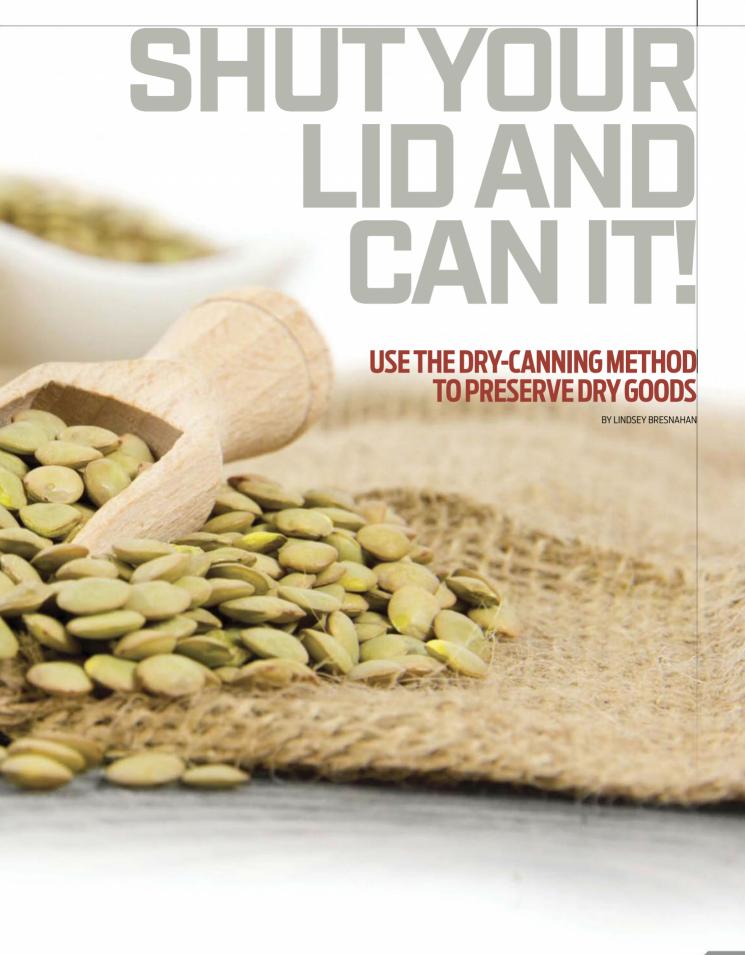


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for food items with a moisture content of under 10 percent. This method works well with pasta, white rice, dried beans, rolled oats, dehydrated apples, potatoes, carrots, soup peas, flour, lentils, cereals (without nuts or raisins), cornmeal, cake, biscuit and bread mixes, quinoa, banana chips, white or powdered sugar, and dehydrated dairy products.

The heat kills any insects or eggs that might be present and seals the jars the same way water bath or pressure canning does. Any food product with greater than 10 percent moisture content should not be preserved by this method, because bacteria can flourish.

In addition, oily foods do not keep well with this method, and that includes brown rice and whole wheat flour. Vacuum sealing or using oxygen absorbers are better options for those items. (However, I don't have the spare cash for a vacuum sealer and food-grade plastic buckets and haven't quite gotten myself into the newagey Mylar bags and oxygen absorbers.)

THE OLD-FASHIONED WAY

On our farm, we like to do as many things as we can manage in the same fashion as our great-grandparents. Kept in ideal conditions, certain dry-canned items can remain viable for 30 years or more!

All canned goods should be kept in a dark, dry, cool part of your house. My pantry is in my basement, which is unheated. Always keep goods of any sort off the floor. A pallet or even a board propped up on cordwood or cinder blocks will work just fine. This will encourage air circulation and discourage mice from helping themselves to your stash.

Using glass jars will also eliminate the mouse problem, because they can chew through vacuum bags, Mylar bags and even plastic buckets. Anything dry-canned that has a dairy product in it should be used within a year or two, but most other goods will last between 10 and 20 years.

All kinds of dry goods can be out away for long-term storage, just in case nor-mal supply chains dry up.



chewing through

to the food.



Make sure that when the jars are filled, there is at least ½ inch of headspace left before putting the jars in the oven.



After the jars with the food have sat in the oven for an hour, wipe off the rim with a damp cloth. Then, put on the cap and tighten the ring down as far as vou can





just as great mixed into pasta or potato salad, sprinkled on popcorn or mixed into scrambled eggs.

Ingredients

2 cups powdered buttermilk

2 tablespoons garlic powder

4 tablespoons dried minced onion

2 tablespoons mion powder

1/2 tablespoon white pepper 3 tablespoons dried parsley flakes 2 tablespoons dried dill weed

1 tablespoon salt (I love Redmond's Real Salt, which has so many trace minerals that are good for you! Check your local feed store for availability; this company also makes natural salt licks for livestock. www.realsalt.com)

Putall ingredients in your blender, food processor or a bowl and whisk until fully mixed. Put in half-pint jelly jars or pint jars and process according to the dry-canning directions in this article. Once the jar has been opened, you can store any unused mix in the fridge or root cellar for a few

> To prepare this mix as a salad dressing, mix 3 tablespoons of the dry mix with 1 cup of mayornaise and 1 cup of milk. You can also add this dressing mix to meatloaf or snack mix, or mix it with sour cream to make a vegetable dip. Versatility is key in my pantry!

DRY-CANNING 101

To begin, wash and dry all your glass mason jars. You can use pint, quart or half-gallon sizes. I find loads of them at yard sales, the free table at the dump and in the classifieds. Purchasing new lids and rings is a sound practice when reusing jars, because even the tiniest dent in an old lid can spoil your food (and your efforts).

Preheat your oven to 200 degrees (F), and set your jars on a cookie sheet or baking pan. Fill each of your jars with dry goods, leaving 1/2 inch of headspace. Once the oven reaches 200 degrees, place your pan of jars inside and set a timer for an hour. Sterilize your lids and rings while you wait by boiling them in a pan of water on

"DRY-CANNING IS A WONDERFUL **WAY TO PRESERVE DRY GOODS FOR LONG-TERM** STORAGE."

the stovetop for 10 minutes. Dry them and set them aside on a clean towel

After an hour, carefully remove the tray from the oven with potholders or oven mitts. Using a damp (not drenched) clean cloth, wipe the rim of each jar and then place a lid and ring on the jar as tightly as you can. Be sure to use mitts or other heatproof gloves while doing this, because those jars are hot.

Place the lidded jars back on the tray and return them to the oven for another 30 minutes. When you remove them after the half-hour is up, take the jars out of the tray and allow them to cool on a nonheat-reactive countertop, cutting board or clean dishtowel. Soon, you will hear the celebratory pings of your lids sealing. Victory!

Some folks who prep for disaster shun this method in favor of vacuum sealing. I think it's very important to learn methods of preservation that don't require electricity, because this method can be achieved with a wood stove that has an oven feature. Electricity is not something we can rely on in every situation, and knowledge of old-fashioned practices is wonderful to have, even if you choose a different method.

Vacuum-sealed items are definitely more efficient to pack in a bugout bag, but when I think of my main food prepping plan, it is for a stable, at-home survival situation. My most pressing concern is that if I'm stuck at home with a kiddo with a fever, I want to be darned sure I have plenty of mac and cheese on hand to keep the beast at bay!

Not all of us live close to a store for quick, "whoops, we're out of oatmeal!" moments. My town in northern Vermont doesn't have a store of any sort, and the general store in the next town over closes early, has a very limited selection—and sky-high prices.

Having a supplied larder at home helps me endlessly in my daily life. But it's even more helpful to know that I wouldn't be one of the frenzied masses shopping during an emergency scenario. ASG

used jars can he used and are easily found at markets and other venues, new rings and lids should be purchased to lems with the seal





Once the lids and rings are put on, put the iars back in the oven for an additional half-hour.



The correct oven temperature for dry canning-both rings are put on and afterward—is 200 degrees (F).





COMMUNICATIONS IN THE FIELD

STORY AND PHOTOS BY JIM JEFFRIES

mateur radio operators usually refer to their communications equipment as their "station," whether it is a base station at home, mobile station in a vehicle or portable station when on foot. There is one other type of station only a small number of hams really concentrate on: the emergency communications station.

Putting together a field, or emergency communications, station (EmComm) is similar to setting up a home station. Both types of stations share many common elements: radios that cover all amateur bands, antenna systems appropriate for those bands with some type of supporting structure, and a source of electricity for power. The operation of both station types is about the same, but the environmental conditions may be vastly different.

This article will highlight some of the major differences regarding equipment selection, operating parameters and skill sets that separate the two types of stations in their typical configurations.

AT HOME

When a ham radio operator assembles a home station, it is often set up in a space that will be dedicated to amateur radio activities, creating what is often referred to

as the "shack." Equipment can be permanently installed, and antenna feed lines can be routed in such a way that they are well protected from both physical hazards (i.e., strong winds) and potential interference sources. Antennas can be mounted high on a permanent structure designed to provide the greatest potential for clear and effective communications.

Radio transceivers can be placed at the optimal viewing height and angle to allow for efficient operation and eliminate operator fatigue. Items can be placed in logical and well-organized positions so the operator can move smoothly from one task to the next. Antenna feed lines may be of any type and





can be cut to the perfect length to minimize any "loss" ("loss" refers to energy absorbed in the feed line that should have gone to the antenna). A virtually limitless supply of power is available in a home station, permitting continuous operation with little concern of energy consumption.

Environmental conditions at home can be nearly perfect in terms of temperature, humidity, lighting and ambient noise—most anything that might distract the operator can be removed or controlled. The equipment can be of whatever quality the operator chooses, have as many functions and be as large and powerful as desired.

Because all the comforts of home are available (including food, water, sanitation and security), the operator can concentrate on the enjoyment that amateur radio provides. A well-equipped shack can represent quite an investment in time and money—sometimes, well in excess of 10 thousand dollars—and the operator would

A manufactured GSRV (left) and a "home-brew" wire dipole (right). These antennas are often used in the field, and both perform admirably. They both cost about the be hard pressed to risk taking that kind of investment out into the field.

IN THE FIELD

Things can change dramatically when the operator is forced (or chooses) to take the station out of the shack and set it up outdoors. In this environment, portability, dependability and efficiency are key factors. Simplicity replaces the extra functionality of deluxe equipment, and adaptability trumps convenience. Gone is the expansive desk—now replaced by a tree stump or tailgate.

The KISS ("Keep it simple, stupid!") approach becomes the maxim, and Murphy's Law ("Whatever can go wrong, will") is always a concern. The operator must forget about the comfort provided by four walls and a roof but remember to always have a way to shelter the station from the elements.

Even without the comforts of a home station, an austere field station can still provide effective and reliable communications. Many amateur radio operators use the same equipment in their shack that they would take into the field for EmComm use and frequently practice taking their station outdoors to simulate an emergency deployment. This ensures the station works as expected and that it can be set up in minimal time with little or no assistance. Much like a shakedown exercise, any problems can be discovered and resolved well before an emergency arises.

When assembling an EmComm station, the equipment should be compact to meet portability requirements, and it must be rugged enough to handle extreme variations in temperatures, humidity and rain, not to mention rough handling. Controls must be easy to manipulate and large enough to allow for operation with gloved hands. Displays





"RECHARGEABLE BATTERIES. SUCH AS THOSE **DESIGNED FOR DEEP DISCHARGE** (DEEP CYCLE) **USED IN THE MARINE AND** RECREATIONAL **VEHICLE** INDUSTRIES. **ARE GREAT POWER SOURCES FOR FIELD AND EMCOMM** STATIONS."

need to be simple and viewable in any lighting condition and at awkward angles. Peripheral equipment, such as antenna tuners (sometimes required to "match" the output of the radio to the impedance of the antenna system), may be necessary in a field or EmComm station but should be kept to a minimum, both in size and number, while still maintaining the station's capabilities.

Antennas designed to be mounted high on a tower generally are not practical for a hasty deployment. Hams will usually purchase less-complex antennas, such as the G5RV (invented in 1946 by Louis Varney; amateur call sign "G5RV") to use in field conditions. Amateur radio operators will often fabricate their own antennas, tuned to be resonant on the desired frequencies. either from published designs or of their own conception, with antenna supports provided by nature or brought along by the operator.

Feed lines used in a home station can be of any type suitable for the frequencies on which it will be operating: coax, hardline or open-wire. Feed lines used in Em-Comm stations are usually a "one-sizefits-most" variety; coax such as RG-8X or LMR-240 are good choices for portability because of their smaller diameter and increased flexibility. Even though these types of feed lines may exhibit higher loss than those favored for permanent installations, the shorter lengths used in field stations mitigate the loss and are easier to pack into smaller spaces.

are needed when

typical 12-volt bat-teries used in ama-Deep Cycle, 17-amp hour SLA and 7.5 amp hour SLA

protects the paralle connected batteries





One of the most limiting factors with EmComm stations is the availability of electrical power. Power for the station usually comes from batteries. Rechargeable batteries, such as those designed for deep discharge (deep cycle) used in the marine and recreational vehicle industries, are great power sources for field and EmComm stations. Equipment designed to work on the voltage provided by the battery can be directly connected (with an inline fuse) or through a power conversion device, such as an inverter, to provide the required voltage.

The homemade antenna is lifted as high as possible into the branches of a tree. With the feed point hanging at 12 feet, the station was able to make contact 1,222 miles away on 20 meters at 5 watts output (this was a low-height, low-power test).

"EVEN WITHOUT THE COMFORTS OF A HOME STATION, AN AUSTERE FIELD STATION CAN STILL PROVIDE EFFECTIVE AND RELIABLE COMMUNICATIONS."

Large deep-cycle batteries are heavy and can pose a hazard due to leakage (even maintenance-free batteries can leak from the vents along the top of the battery). Care must be taken to keep the battery in an upright position in transit and use. Other battery types, such as SLA (sealed lead acid), AGM (absorbed glass mat) and gel cell batteries are available in more-compact sizes—making them easier to transport because of their lighter weight and safer due to their leak-free construction.

If a single battery is unable to supply enough current to meet high-power transmitting demands, multiple batteries





The feed point of the home-brew antenna. Using all stainless steel reduces the chance of corrosion at the connection. The lower wires that exit the side of the feed point are tuned for 20 meters, the top wires (secured with 550 cord to the stainless eyebolts) are tuned for 40 meters, and their extra length makes it a good way to relieve the strain on the electrical connectors.

can be used simultaneously, wired in parallel, to provide sufficient power to the transceiver. Newer battery types derived from lithium ion technology offer greater energy density (more stored energy per ounce) and more-consistent voltage across their discharge cycle, but these batteries are usually more expensive and might require specialized charging systems.

Solar charging systems (consisting of one or more solar panels and a charge controller) will help meet the station's power demand during daylight hours, with any excess power they produce going toward recharging the batteries. Batteries can also be recharged by a vehicle's charging system or by a fuel-powered generator (through an appropriate battery charger).

When operating from a limited source of power, the following operating procedures should be observed for efficiency: Use the lowest transmitter power necessary to establish and maintain contact; keep transmissions brief and concise (sometimes, through the use of brevity codes and phrases); and power off any equipment not required at the time.

When the EmComm station is not in use, it needs to be stored and ready for transport in a way that will keep the components organized and secure. Surplus metal ammunition cans are available in

originating station (200 to 600 miles) HF skip zone

mary HF antenna 40 and 20 meters They are also effect the Yaesu FT-450D

many different sizes and offer increased protection from rough handling and environmental hazards; and, with slight modification (see sidebar), they can also protect against a possible EMP.

Ammunition cans are usually very affordable and widely available. There are several companies that make custom cases designed for equipment to be rigidly mounted inside and feature opening or removable covers for access to the interior. For less-sensitive and bulky equipment such as antennas and feed lines, plastic tubs with secure fitting lids are more than adequate.

THE RIGHT EQUIPMENT

As stated earlier, when selecting equipment for an EmComm or field station, a simple, solid design should be the primary consideration. Having a transceiver that does everything imaginable is fine in the shack, but when stress levels are high, normally easy tasks can become difficult. Following the KISS approach will reduce the chances of becoming overwhelmed. For long-distance communications, a transceiver that covers all the high-frequency







bands is necessary. Emergency communications can, and do, occur on all amateur bands, and being able to transmit on the 80, 40, 20 and 15 meter bands will ensure the station is capable of continued operation as band conditions change. HF communications can be difficult at times due to atmospheric and manmade noise conditions; having the ability to transmit at power levels as high as 100 watts is justified.

The entire station takes up just over half the width of this tailgate

"SIMPLICITY REPLACES THE EXTRA FUNCTIONALITY OF DELUXE EQUIPMENT, AND ADAPTABILITY TRUMPS CONVENIENCE."

New HF transceivers meeting these criteria generally cost in the \$800 to \$1,600 (U.S.) range. Some good examples are the Yaesu FT-450D and Kenwood TS-480SAT, both of which have an internal antenna tuner—a worthwhile feature when using a field-expedient antenna. The Icom IC-7200 was designed to meet the requirements of field communications but does not offer an internal tuner. There are many other transceivers that will perform well in a field or EmComm setting.

VHF and UHF frequencies are used extensively in emergency communications to provide local and regional coverage. The 2-meter band is where most official emergency management activity can be found due to its good range characteristics and the abundance of repeaters, especially in densely populated areas. Single-band, 2-meter transceivers are usually sufficient for participating in or monitoring emergency management radio traffic.

Multiband VHF/UHF mobile radios are available that cover both the 2-meter and the 70-centimeter bands (420 to 450 MHz in the United States) and provide additional versatility. Single-band, mobile, 2-meter radio prices start at around \$150 new, and multiband VHF/UHF mobile transceiver prices start at about twice that. Some good examples are the Yaesu FT-2900R and the Icom IC-2300H—both single-band, 2-meter transceivers.

For multiband, the Yaesu FT-7900R and the Icom ID-880H are solid performers. Keep in mind that not all mobile transceivers are created equal; select a model that has a true low-power setting. Most mobile radios transmit at 5 watts or fewer on the low-power setting, whereas some push considerably more—up to 25 watts at their lowest power setting. Again, power conservation is paramount when relying on batteries. Several models have multiple power settings, from lowest to highest, that allow a step up in range with

a minimal increase in power consumption (for example, 5, 10, 30 and 75 watts selectable output on the Yaesu FT-2900R).

A few manufacturers have developed designs that cram very capable multimode/all-band transceivers into ultra-compact housings, creating an all-in-one radio that covers all bands from HF through 70-centimeter UHF. These transceivers may even offer 100 watts output and other features usually found in larger base station radios.

While these are great radios, the tiny control panels do not leave much real estate for buttons and knobs, meaning that many of the advanced functions are buried in submenus. Some, like the Icom IC-7100, have touch screens to make access to settings and functions somewhat easier. All-in-one radios, no matter how capable, can only do one thing at a time, so if working HF and VHF frequencies at the same time is required, two separate transceivers are needed.

While base station and mobile radios are huge assets to the EmComm station, there are occasions when the operator needs the added portability of an HT (handheld transceiver). An HT can perform many of the tasks of the mobile transceiver, although with lower maximum power capability—but with no power cords to contend with. The short, rubber antenna that comes with an HT (nicknamed the "rubber ducky") can be removed. This allows a more effective antenna to be installed in its place, either directly to the HT or by means of an adanter

Many HTs have optional battery packs available that will accept AA alkaline batteries, thus permitting operation beyond the capacity of the rechargeable battery. HTs can cost as much as mobile transceivers and are available in both single and multiband models. Most handhelds are surprisingly tough, able to withstand drops and falls, and some are water resistant to the point of being submersible. For emergency situations, this level of versatility and durability makes the HT an essential piece of gear.

The newer digital protocols, such as D-STAR (digital smart technologies for amateur radio—an open standard digital protocol used by Icom America) and System Fusion (Yaesu's implementation of digital amateur radio based on C4FM), among others, provide little benefit to emergency communications. The differing protocols are incompatible with one

another; even if they were compatible, nondigital radios would be unable to decode the signals.

Digital protocols are appearing on (HF, VHF and UHF) base, mobile and handheld transceivers, as well as repeaters. For emergency communications, interoperability is crucial: digital capability or compatibility should not be a consideration. If using a digital-capable radio for EmComm purposes, ensure it is set to operate in the analog mode. The digital protocols mentioned here are not the same as digital modes used elsewhere in amateur radio (digital modes will be the topic of a future article).

When purchasing equipment for critical communications, place quality before price. The name brand manufacturers (Yaesu, Icom, Alinco and Kenwood, to name a few) are known for producing high-quality transceivers and other amateur radio equipment. Their commitment to quality carries over into the documentation that accompanies their products and makes for an enjoyable experience when setting up the equipment.

Many new radios designed and manufactured in China have become available within the last few years and are being sold at very low prices. Most of these were originally designed for other radio services and have been programmed or modified by the manufacturer to cover the amateur radio bands, sometimes without FCC approval or certification for use on ham bands in the United States.

The sparse documentation that comes with those radios often leads to frustration when attempting to program the radio. Many users, new and seasoned hams, alike, resort to programming through computer software; this dependency on a computer to program the radio can lead to problems in the field. Learn to program manually through the buttons and menus on the radio, and keep a cheat sheet on hand if necessary. User manuals for all equipment should be kept with the station for reference in the field.

Many hams find the EmComm station is all they ever need and use it at home or in the field as their primary equipment. These hams guickly become very efficient and effective operators in any situation or environment in which they might find themselves—but their proficiency comes through practice. That proficiency would certainly be useful in most any kind of survival scenario and would ensure your connection to the outside world, ASG

SOURCES

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MINUTEMAN FERRO RODS

Minuteman Provision Company also provides high-quality ferrocerium rods to help start the Minuteman Rocket Stove—or any other fire you may need. The ferro rods all come with an attached scraper that will have you throwing sparks as if it's the Fourth of July.

These fire starters are available in a number of sizes, colors and handle materials, but my favorite has to be the massive, 12-inch Forever 50. It is made from a recycled .50-caliber BMG shell with a ½- by 6-inch fire rod and a 5-inch paracord bracelet adorned with a skull bead.

With technology at our fingertips, we have a lot of choices when it comes to our outdoor culinary options. These designs generally fall into one of three categories-portable units that use natural materials, gas-operated systems or the traditional open-flame campfire. Each method has pros and cons. and we all

natural tinder have created a market that has been the impetus for many new inventions and improved products over the years. Companies have invested a lot of time, money and resources into finding ways to make the fire stove more compact

Great designs have come from this concept, but they have one inherent drawback: A small stove struggles to quickly generate, or even create, a lot of heat for the cooking surface. In addition, the traditional open fire requires a lot of space, natural materials and might not always be an option, depending on where you are camping.

So, how do you combine a small cooking stove concept, open-flame flavor, hightemperature capabilities and portability? The answer may seem complex, but the solution lies in simplicity.

Lane Miller, owner of Minuteman Provision Company, has taken traditional campfire cooking and condensed it into a portable stove system known as the Minuteman Rocket Stove. The beauty of





this might not be the first choice for a backpacking stove. Consequently, where the Minuteman Rocket stove excels is car camping, in RVs, and for tailgating and overlanding.

HOW IT WORKS

Stove operation is very simple. Completely remove the ammo can lid. Place the pot support on top of the fire chimney, and then, using small tinder or your preferred starting method, build the fire up until you're burning sticks up to about 1½ inches in diameter. You can fit larger sticks in. but I have found that if you use medium-sized sticks, it results in a hotter burn. Feeding the sticks vertically into the chimney will help pull the flames up into the chimney. It won't take very long to achieve the proper burn temperature, usually around five to 10 minutes. Be sure to place the chimney downwind to provide proper airflow, keeping the fire burning at the maximum temperature. That's it. Now, start cooking.

Once the fire is going, simply keep feeding the stove as needed. More fuel burning properly equals greater heat; less fuel (coals and a small flame) will help you maintain a lower temperature for more of a simmer. Just be careful not to get too much of a buildup of coals, because this will affect the performance. I found my U-Dig-It shovel to work great for clearing excess coals and ash.

It's really that simple, and the more you use it, the more you will figure out what works best.

CLEANUP—A BREEZE

If you're like me, there's nothing more enjoyable than cleaning up after you cook. (Yeah, right.) Don't worry—the Minuteman Rocket Stove has you covered there, too.

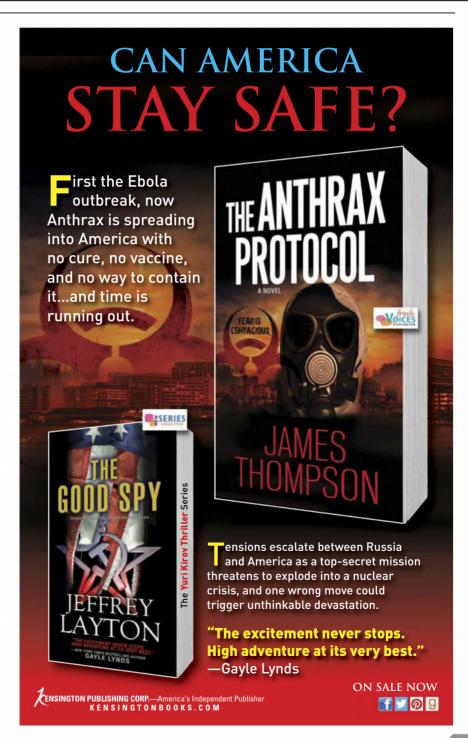
Once the stove completely cools down. just dump out the ash, replace the lid and close the stove up for transport. The lid contains a heavy-duty O-ring to seal out any smell of ash and soot from leaching into your vehicle. The sample I reviewed has been in my Jeep for a few weeks, and I often forget that the stove is even there.

You may have guessed by the military-inspired design of the stove and fire starters that all the items manufactured by Minuteman Provision Company are made proudly in the U.S.A., right in the heart of North Carolina. The Minuteman Rocket Stove is available in three colors: black, frost-green and ruby-red. They each retail for \$159.95 and are backed by a five-year warranty on all parts and construction. ASG

"THE TEMPERATURES INSIDE THE STOVE WILL REACH UP TO 1,300 DEGREES (F)—A TEMPERATURE HIGH ENOUGH TO SEAR THAT NEW YORK STRIP ON YOUR CAST IRON."

SOURCE

- MINUTEMAN PROVISION COMPANY (252) 996-0856
- WWW.MINUTEMANSTOVE.COM







et's say the world goes wrong all at once, but you're prepared. You've put away food and water and have basic supplies to take care of your power and medical needs—at least for a while. You've got some bushcraft knowledge, can grow a garden and provide for your family on a long-term basis with crops, fishing and hunting.

You're better off than 97 percent of the people out there when it comes to being prepared ... and that's the problem.

If things go wrong, what you have is what they need, and they will kill you to get it. Even when things are good, you're still not safe. I did an Internet search while I wrote this article, and I discovered that 13 different home invasion articles from all across the country had been posted within the previous six hours—and those are just the ones picked up by a single search engine.

In truth, we are not completely safe anymore, even within the confines of our own homes. That's why we must take responsibility for our own safety and take the necessary steps to protect our loved ones and ourselves.

In most cases, your first line of defense is a handgun. It's easier to move from place

to place, it's less expensive to practice with, and it's easier to hide.

ABOUT MOS

That's why, when Glock announced the new G41 MOS in .45 Auto, I was eager to try it out. I had several ideas in my head about what could be done with it and how it could be configured to be the best home-defense pistol for someone like me. I also felt it could be tricked out enough to be the best overall pistol in a general open-carry environment, which is what this country would he if the "fit ever hits the shan."

The Glock 41 MOS is one of four new models in Glock's MOS ("Modular Optic System") line of pistols. These are Gen4 pistols featuring a top plate that can be removed from the top of the slide to install red-dot sights from different manufacturers. With the advent of less expensive and more available red-dot sights, a lot of people have taken the time and expense to have their slides milled by gunsmiths so a red-dot optic could be installed on their pistol.

That's no longer required with the new MOS line of pistols. Glock supplies four metal adaptors you can fit into the recessed area at the top of the slide. These will

GLOCK'S G41 MOS AN EXCELLENT, COMBAT-**PISTOL PLATFORM**

TEXT AND PHOTOS BY GARRETT LUCAS





As with other Gen4 models, the G41 MOS has more-aggressive texturing than the previous generation's lineup. Additionally, the larger magazine release can be quickly switched from the right side to the left, de-

pending on user preference, and the G41 has removable back straps that can be changed to provide the best grip size for the user.

The G41 has an overall length of 8.90 inches, a height of 5.47 and a width of 1.28. Unloaded, the G1 weighs 27 ounces and tips the scales at 36 ounces with a full magazine. Much like its brother, the G21, this isn't a pistol the average person can easily conceal especially with its longer barrel. It's either for sport shooting or service use. (When most people see the term, "service use," they typically think of the military or law enforcement. When I use that phrase, I mean that it's better for all of the above and home defense or open carry-situations in which you don't have to conceal the firearm.)

THE ULTIMATE **DEFENSIVE PISTOL**

I remember reading an article by Masaad Ayoob many years ago about his "bedside gun." It was a Beretta 92 with night sights, a weapon light and a 20-round magazine. That's basically the direction I wanted to take with the G41 MOS ... with a bit of a twist. Not only did I want the weapon light, I also wanted a green laser and a robust red-dot sight system. So, whether I'm using it during the day or night, I've got my bases covered.

THE LEUPOLD DELTAPOINT **PRO**

This led to me reaching out to a couple of companies to help me put this "ultimate defensive pistol" together. First, I caught up with Leupold and had it send me its new DeltaPoint Pro optic. Leupold is known for its excellent customer service. lifetime guarantees and the positive reviews of its red-dot optic system, so it was an easy choice to have Leupold be part of the project.

The DeltaPoint Pro is an enhanced version of the original DeltaPoint. It now has an easy-to-access battery compartment that houses a standard 2032 battery. Both the optic and the battery housing are waterproof to 33 feet, so it's definitely built to meet the needs of the civilian who wants a rugged red-dot to run on their pistol. The Delta Point Pro also has what Leupold calls "motion sensor technology" (MST), which puts the optic into standby mode after five minutes of inactivity and then turns the system back on once the firearm has been moved again.

The DeltaPoint Pro's construction is a combination of aluminum shrouded with

> Leupold's DeltaPoint Pro is an excellent addition to the G41 MOS via Glock's #4 adapter plate. The unit has a 25 MOA red dot a 60 MOA range of adjustment and a great sight picture through the aspher ic glass used in the sight window. JIDE 61

[THEASG.C



SPECIFICATIONS

Streamlight TLR-2 G

- > LENGTH: 3.39 inches
- > WIDTH: 1.47 inches
- > HEIGHT: 1.83 inches
- > WEIGHT: 4.72 ounces
- > LIGHT OUTPUT: 300 lumens
- > LASER TYPE: 510-530nm
- > SWITCH: Ambidextrous momentary/steady
- > POWER: CR123 (2)
- > LED TYPE: C4 technology
- > MSRP: \$561

spring steel to live up to the requirements for a rugged optic. The optic includes aspheric glass, which most experienced photographers know provides better image quality by correcting spherical aberration. The unit weighs 1.95 ounces, has a 2.5 MOA red dot and allows up to 60 MOA of adjustment for windage and elevation in 1 MOA increments.

The TLR-2 G combines a 300-lumen LED flashlight with a 510-30nm direct-drive green laser. It operates on two CR123 batteries and provides 2.5 hours of run time with both the light and the laser turned on. At the rear of the unit is a three-position switch that allows for laser only, light only and a combination of both light and laser operation. The TLR-2 G will operate for 17 hours with only the laser activated.

The best part of the package (well, almost ... I really like lasers) is the lifetime warranty Streamlight provides. I've had several Streamlight products in the past and still have most of them. I've lost a couple here and there. I've never had an issue to this day with any of this company's products, but the lifetime warranty gives me that extra-secure feeling, were I to put my money into a product like this.

AT HOME

By far, the most time we spend anywhere is in our homes. However, some folks take half measures in preparing to defend their homes and families. Some might have a firearm located in a closet, but rarely do they train with that firearm—much less take into account various conditions that might be present when a home invasion occurs. For instance, if something happens at 3 a.m., it will probably be pitch black, and there is a good chance you're not going to be 100 percent awake.

To deal with some of those conditions, the package I put together with the G41 MOS will not only provide better sight-acquisition options with the green laser on the TRL-2 G and the red-dot on the DeltaPoint Pro, it also provides a 300-lumen light so you can clearly identify your target.

Aside from helping overcome some of the environmental conditions, assisted-sighting accessories such as red-dots and lasers can help those who aren't as proficient with firearms as others. This is not to say training is unnecessary, but the fact is, a good a majority of gun owners do not practice on a regular basis. The advantages of a system such as this could be the edge that makes the difference in a life-or-death situation.

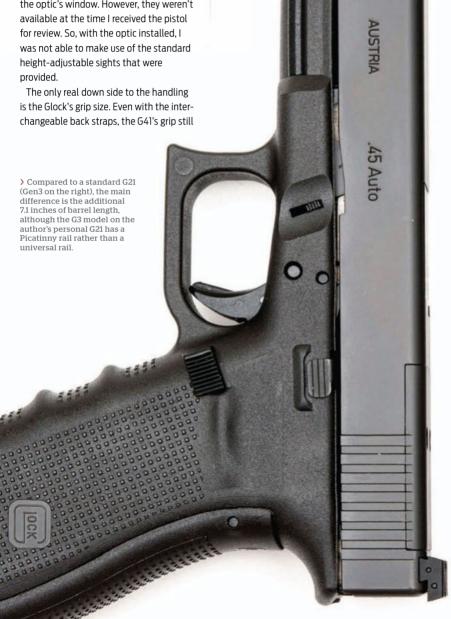
HANDLING

Considering the barrel length and the addition of the DeltaPoint Pro and the Streamlight TRL-2 G, one would think the G41 MOS would be too heavy to use effectively. That's where the beauty of the Glock's polymer frame comes into play: With both accessories

attached, and even with the longer barrel, the whole package weighs only 33.67 ounces. Granted, it's more than the usual Glock, but for decades, people were used to carrying and using steel-framed pistols that weighed much more.

I currently have a Smith & Wesson 5906 that weighs 38 ounces, and a stock, factory 1911 can weigh up to 42 or 43 ounces, all told. Even my slim and very ergonomic CZ-75B weighs 35.2 ounces. So, considering you get the addition of a light, laser and a red-dot optic that, combined with the Glock, together still weigh less than a standard, steel-framed pistol, the balance sheet still shows in your favor—and then some.

Glock makes suppressor-height sights that are standard issue for the G41 MOS so the user can co-witness the sights through the optic's window. However, they weren't available at the time I received the pistol for review. So, with the optic installed, I was not able to make use of the standard height-adjustable sights that were provided.



"IN MOST CASES, YOUR FIRST LINE OF DEFENSE IS A HANDGUN. IT'S EASIER TO MOVE FROM PLACE TO PLACE, IT'S LESS EXPENSIVE TO PRACTICE WITH, AND IT'S EASIER TO HIDE."

lock





has some girth, and it's going to be too large for some people. It's just a fact of life. Keeping that in mind, I would recommend that before purchasing this Glock, you take some time to get a true "feel" of the grip—having, of course, tried out all the interchangeable back straps.

GOING HOT!

Finally getting a chance to try out the G41 MOS at the range a couple of times proved to be an informative experience, considering it was tricked out with a lot of gear most folks don't use together. But what surprised me the most during the range sessions was how well several types of ammunition printed on paper. Usually, if I try five or six different loads, one or two will be the pistol's favorite by a large margin, with the other groups spreading out a bit more.

That wasn't the case with the G41 MOS. I took ammunition that was supplied to me for the review by HPR Ammunition, as well as by Hornady and Winchester. Winchester's 230-grain training rounds from its Train and Defend line and HPR's 230-grain JHPs both shot groups almost as tightly as the pricier, premium ammunition.

Hornady's 220-grain +P Critical Duty and Winchester's 230-grain, low-recoil Defend ammunition both shot groups under 2 inches, but Winchester's and HPR's practice ammunition weren't much farther out, with a spread of around 2.5 inches. It just didn't matter; the G41 MOS liked everything that was fed through it during those sessions. Nevertheless, there's always a best 25-yard group, and Hornady's 220-grain +P FlexLock loads came in at a 1¾-inch group at 25 yards.

A WHOLE LOT OF SHAKING GOING ON

Even when you've been practicing a lot and think you're well on your way to good marks-manship and excellent weapon control, it's still easy to find things to improve—if you pay attention. With both the green laser on the TRL-2 G and the red dot on the DeltaPoint Pro, I was able to get consistent, precise hits at longer distances, provided I had some support such as a bench rest.

Even off hand, getting good shots at closer distances such as 7 to 15 yards was much easier to achieve. But the farther out I shot, the more I noticed how much the laser or red dot was moving all over the target, both while aiming and trying to get back on target after the recoil. Such devices should never replace the ability to use iron sights accurately, but they are great training tools.

Watching the green dot bobble around at 25 yards gave me an idea of the margin of error I could have with every shot if I pulled the trigger at the wrong time. It helped me focus on my stance, breathing and trigger pull while trying to keep the dot on target. I found this to be a very satisfying experience. Not only was I able to shoot better with these devices, I could also see real-time results of my hold and shooting technique.

THE REST OF THE STORY

All in all, the G41 MOS performed extremely well during its trials. There were no malfunctions, and it had the same feel, trigger pull and handling characteristics of my other Glocks. It was all good. What made it even better was the pre-milled slide that was ready to accept

pistol optics right out of the box, saving the user time and money at a smith's shop.

The improvements made on the DeltaPoint Pro are significant, and I was impressed by how well it mated with the G41 MOS and what it added to the shooting experience. The Streamlight TLR-2 G really added to the versatility of the package by offering options for both daytime and nighttime use. The 300-lumen lamp is bright enough to allow you to work in the darkness, and the green direct-drive laser is extremely visible for daytime use, as well.

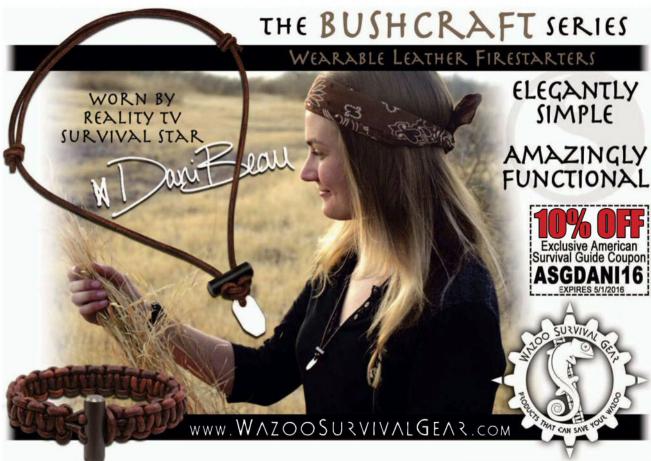
As it's configured now, I just don't see what more utility a person could want out of an ultimate-service pistol. This is one that would stay with me through the house, and it's what I would carry for defensive use in open-carry environments—provided I had a properly fitted holster for it

Glock offers similar MOS models in 9mm, 40 S&W and 10mm Auto if .45 Auto is not your style or if you're looking for a higher-capacity version. With those kinds of choices and the configurability of this pistol line, Glock has what you need to build out a robust combat-pistol system that will see you through most any situation you will encounter. **ASG**

SOURCES

- GLOCK, INC.
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 WWW.GLOCK.COM
- LEUPOLD & STEVENS1-800-LEUPOLDWWW.LEUPOLD.COM
- STREAMLIGHT, INC. (800) 523-7488 WWW.STREAMLIGHT.COM







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LONG-TERM LIGHTING SOLUTIONS FOR **ATYPICAL OUTAGES** STORY BY KEVIN ESTELA he lights go out. You're in darkness. It could have been a car crash that took out the neighborhood's transformer or a brownout from too much stress on the power grid. Even worse, it could have been the ice storm that just hit and brought down trees on the power lines. It could be weeks before the power is back You don't know; you might never find out. And right now, you don't care. Your priority is lighting. The traditional approach—the quick fix—is to reach for an LED flashlight or a battery-powered LED lantern. But this time, it's different: There is no power when you flick the switch and, as far as you can ascertain, the batteries are drained somehow or the circuits are fried (maybe a HEMP damaged the circuitry after all). You still need light and, luckily, you still have your senses. You find a BIC lighter in your pocket and then the candle from your end table. Your light problems are temporarily addressed ... but that candle will eventually burn out. What next?

"MAKE
HOMEMADE
WICKS OUT OF
TWINE AND
SOME SIMPLE
INGREDIENTS;
FASHION WICK
TABS FROM
SCRAP METAL,
WASHERS OR
SODA CAN
TARS."

CAN OR BOTTLE LAMP

If open flames are not a concern, one of the quickest and most field-expedient lamps made is the aluminum or glass-bottle variety. The only items needed for the most basic light are a container, fuel and a wick. Improved versions include those with wicks wrapped in lightweight wire to provide rigidity, along with heat reflectors made from folded aluminum flashing or an aluminum can opened into a hollow cylinder. If this type of lamp is used outdoors, citronella oil can be used to provide insect protection, as well.

A word of caution: The taller and narrower the can, the less stable the lamp will be. Toppled liquid fuel lamps can cause fire to spread quickly if the fuel is absorbed by another "wick." This can be clothing, carpeting or anything absorbent and flammable. A pot of soil can be used to house the lamp indoors, providing a pressure-forming base and an absorbent medium for accidentally spilled fuel.

COCONUT-OIL ISLAND LAMPS

During the Japanese Imperial Army's occupation of the Philippines during World War II, my grandfather taught my father and his brothers how to create jungle lamps. A seashell was used as the container, and a piece of cotton or canvas was used as the wick. A small chunk of cork was used as a float to keep the flame from extinguishing itself if the wick fell below the surface of the oil, which was made from the plentiful coconuts found in the forest.

The benefit of this type of emergency lamp is the ease in determining how much fuel remains, as well as the stability



> A glass bottle lamp sits in a metal container illuminating the author's living room. Depending on the length of the wick, the flame will vary in height and light output.





"WHILE CANDLES ARE PART OF THE REASON FOR HOUSE FIRES EVERY YEAR, REMEMBER THAT CANDLES WERE USED FOR GENERATIONS PRIOR TO ELECTRICITY."

provided by the seashell's wide base. Sea shells probably aren't be available in your area, but any small, shallow bowl of similar shape may be used.

The same concept applies whether your container is natural or manmade. One word of warning with this type of lamp, however: If a glass dish is used, don't let it get too hot—if the fuel level gets too low, the glass might shatter.

BIRCH BARK TORCH AND BIRCH BARK OIL

There are natural, long-term lighting issue fixes found right in the forest. Birch trees are known for their tinder potential, and enough articles have been written about collecting



bark and using it for emergency fire starting. Birch has other fire-related applications, as well. When properly processed, birch bark can be used for torches, and oil can be rendered from the bark.

A birch bark torch is simple to make in relatively no time. Use a sharp knife and remove thick layers of bark down to the inner bark of the tree. Take the strip of birch bark and create 1- to 2-inch folds—similar to an accordion shape. Cut a green wood handle to size and split it down the middle at one end. This split will accommodate the folded birch that will ultimately be lit, thereby creating the torch.

Prior to inserting the birch bark, wrap a cord just under the split to prevent it from

splitting further. Light the torch and hold it at an angle (as any torch should be) to prevent flaming material from landing on top of your hand. When the birch bark is nearly burnt out, invert the torch or hold it sideways to direct the flame away from the notch. Then, add another folded section of birch bark.

Birch bark can be used for quick torches such as this one, and its oil can be extracted for use as lamp fuel or lubricating grease. You can easily extract birch oil by building a fire over two cans buried in the

Pack one can with white birch bark and make a single pinhole in the bottom. The other can sits against the bottom to collect the oil that will drip from the hole

CREATING A WICK

A wick can be as simple as a piece of string or length of twisted cotton and, depending on the construction, it can be used to provide a long-lasting, low-intensity light or high-intensity flame for cooking. Wicks can be impregnated with wax or a combination of wax and borax that will slow their burn rate. They can be a single diameter or braided to increase the size of the flame produced.

To create a good, long-lasting wick, take cotton twine and cut it to length. Place 2 tablespoons of salt and 3 tablespoons of boric acid powder in a small container with just enough warm water to dissolve everything. Soak the wicks in this solution for about an hour. Remove the wicks and hang them, allowing 24 hours for them to dry.

If you want to make a thicker wick, this is the stage at which you want braid them. The wicks will braid easier when dry and not coated in wax. Two strands can be reverse wrapped, three can be simple braided, and four can be turned into a round braid. Doubled strands can be braided as one to make an even thicker wick.

When the wick is dry, soak it in melted wax in a double boiler for five to 10 minutes or until it is completely coated. inside and out. Hang to dry. Attach one end to a wick tab, and it is ready to be placed inside a makeshift candle.







Top of page: Birch bark contains oil that can be extracted using two cans and a fire. This oil can be used for lamp fuel or lubricating grease

A birch bark torch is made by accordion-folding a strip of birch bark and inserting it into a torch handle of green wood with a single split cut out. The tighter the fold, the longer the burn.

CANDLE TIN

If the thought of creating candles and lamps is unappealing, there is a commercially available candle that might be right for you.

EXOTAC, a company known for unique fire starters, match cases and the BIC lighter fireSLEEVE, also offers a lineup of purpose-built survival candles for emergency lighting and heat. Available in two configurations—slow burn and hot burn—these candles ignite easily, store and transport securely with a screw top, and are capable of boiling 8 ounces of water in 18 minutes.

Measuring fewer than 3 inches across and weighing 5.5 ounces, the large survival candles are made from natural beeswax and burn longer and hotter than lesser-grade candles. The slow-burn candle will last about 30 hours. When used sparingly during the darkest hours of the night, these candles can last three nights or more.

For the "space conscious" among you, there is a miniature version of this candle system: the candleTIN Nano. Weighing in at only .9 ounce, the candleTIN Nano is perfect for the ultralight backpacker or anyone concerned about the weight of their gear. This smaller candle is perfect for storing inside emergency kits or along with an emergency blanket as part of a rewarming kit.

SOURCE

- ¹ EXOTAC, INC.
- ¹ URL: WWW.EXOTAC.COM



> Melt crayons to create larger candles. This is best accomplished using a double boiler. Pictured: crayons placed in an aluminum can surrounded by warm water

) Homemade candles can be made using recycled or commercially available wax. Make a slow-burning wick by mixing boric acid with salt in a small container of warm water

in the top can. The heat from the fire will do the work. The oil extracted has a very strong oil smell and can be used in a variety of ways, including for lamp oil.

RECYCLED CANDLE

Unused wax can be recycled and made into "mutant" candles. You can probably find wax throughout your home and then recycle it to make candles: For instance, crayons from the kids' playroom, paraffin wax from the kitchen and even beeswax toilet-ring seals can all be melted using a double boiler. If you don't have a double boiler, all you need to do is float a metal bowl or aluminum can in a pot of boiling water. Make homemade wicks out of twine and some simple ingredients; fashion wick tabs from scrap metal, washers or soda can tabs. Of course, these candles will lack the refinement of the store-bought variety, but they will work just as well.





> A straw will help create a wick channel in a makeshift Crisco/vegetable shortening

CRISCO OR TUNA CAN

Crisco (vegetable shortening) can be used to make a candle that serves double duty by providing light and as an emergency food source. All you need is a can of Crisco, a straw and some twine made into a homemade wick. As an alternative to twine, a piece of tightly rolled up paper will work. Depending on the size of the wick, as well as the quantity (up to three wicks can be used with a single can as long as they are not positioned too close to the edge of the can. Otherwise, the can might catch fire, as well), the can of Crisco will burn for hours.

A straw is used to create a channel for the wick. The best time to do this is when the Crisco is soft (frozen or cold Crisco will affect the construction of this type of light). If the Crisco is stored for extended periods, the expiration dates should be checked if it is also meant to be used for



> A Crisco/vegetable-shortening candle will burn for hours. Make sure the flame stays centered, because the Crisco container is made of paper and can ignite. Multiple wicks can be used to create more heat for cooking or boiling water.









A can of tuna fish that is packed in oil can be used as an emergency candle. Simply puncture the can, insert an untreated cotton wick and light it. It is not uncommon for a can of tuna fish to burn for between six and eight hours. (And when the oil runs out, you can eat the tuna fish.)

◀ A single crayon will work as an expedient candle and burn for approximately 20 minutes. The paper acts as the wick, and the crayon, because it is mostly wax, serves as the fuel. Use the melted tip to create a wax base for the crayon to stick to.

> When a birch bark torch is used, the flame is held off to the side to prevent embers from falling on top of your hand. Insert another strip of birch bark into the north when the previous strip is almost burned through



"THERE ARE NATURAL, LONG-TERM LIGHTING ISSUE FIXES FOUND RIGHT IN THE FOREST."

a food source or cooking. When burning this candle, make sure to put it in a fire-resistant container, such as a pot or pan, in case the shortening leaks.

A similar emergency light source can be made from a can of tuna fish. This style of candle will only work with tuna suspended in oil—not in water, for obvious reasons. To make this type of candle, punch a single hole in the can and then insert a food-grade wick into the bottom of the can. (I stress the term, "food grade," because the tuna should not be wasted after the flame goes out.) Once the wick is saturated with oil, light it, and the candle will burn for hours.

LIGHT AT THE END OF THE TUNNEL

The methods described in this article are meant for emergency use only. Should a blackout be expected, prepare traditional and safer means of lighting—for example, LED, propane and kerosene—beforehand. However, there may come a time when risking a fire hazard is more important than living in the dark.

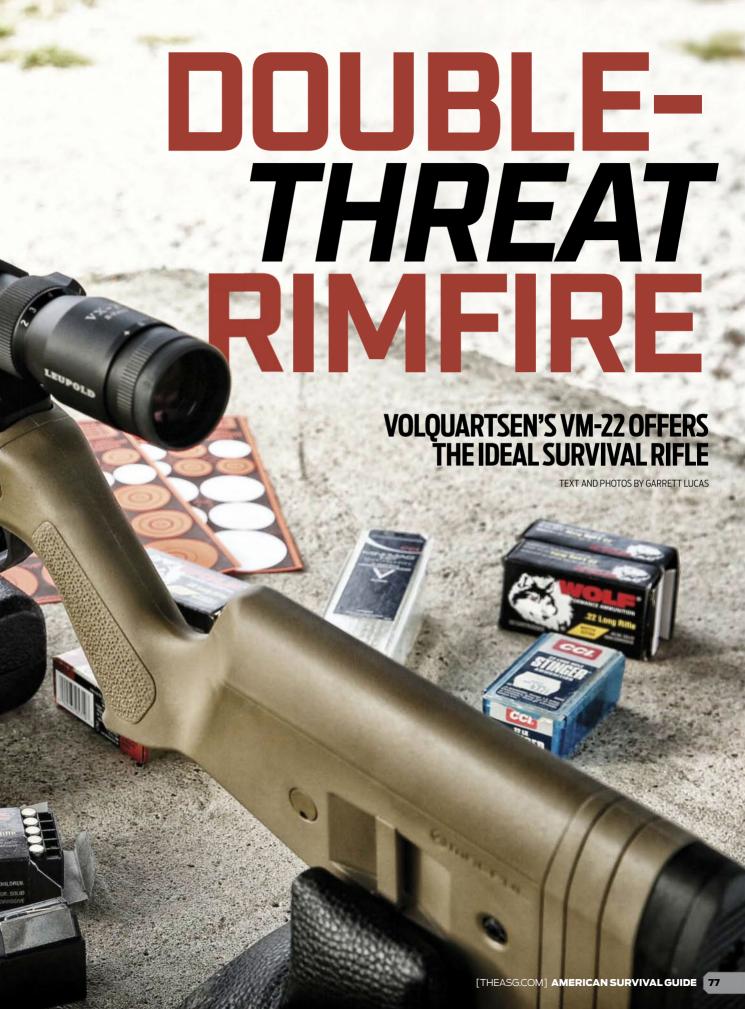
Given the availability of resources, one should think logically about which fuel sources should be exploited first and which ones will be a last resort, as well as which fuel sources are available at home and which can be found on the run or on the go. Surviving and living by candlelight are far different than living with flashlights and lanterns. Actions are more deliberate, and life takes a slower and more cautious pace.

While candles are part of the reason for house fires every year, remember that candles were used for generations prior to electricity. There is no reason to fear them if you use them properly and with discipline. The human race was able to advance and move out of the Dark Ages once before—and can again, if an electrical outage such as a HEMP were to strike the United States.

Until then, though, you don't have to live in the dark. **ASG**











Volguartsen's Superlite Barreled Action and Magpul's new X-22 Hunter Stock.

My review sample's color was Flat Dark Earth. Magpul's X-22 Hunter stock is a lightweight polymer stock with a deep pistol grip and the M-LOK rail-attachment slots for adding accessories. But, because this package was designed to be a lightweight hunting rifle (5 pounds, 4 ounces base weight), you might not want to go crazy with the add-on toys. Aside from the attributes already mentioned, the X-22 Hunter Stock is also adjustable for length of pull and comb height—provided you buy the optional comb attachments. Just a little tinkering here and there, and it doesn't take much time to really make this your rifle.

SUPERLITE BARRELED ACTION

When you're younger and without means, the most you can do sometimes is just study and covet some of the products on the market. I certainly spent a good amount of time looking at Volquartsen products over the past 25 years; and while I knew the company was considered among the best for custom semi-automatic .22s, I wasn't sure whether a \$1,100 to \$1,600 range was a justifiable price for a .22 LR. Boy, did I ever waste time on that thought process!

Volquartsen Custom started out making custom parts and then did custom builds on Ruger 10/22 rifles. Now, the company uses its own CNC machines to custom-build its receivers and other parts required to turn out a complete package. The VM-22's action includes a type III hard-anodized aluminum receiver instead of a typical steel receiver, which helps lighten the weight a bit.

Saving even more weight, the VM-22 incorporates the company's Lightweight Tension Barrel with a carbonfiber sleeve that creates tension on the barrel, itself, to increase stiffness. Volquartsen also included an integrated Picatinny top rail to provide plenty of options for optics.

To finish off the package nicely, the company included its Forward Blow Compensator, which helps with both recoil mitigation and directing the noise of the shot toward the muzzle, rather than at the shooter. The compensator is screwed into place on the 1/2x28 threaded barrel, which means the VM-22 is ready to accept a suppressor at any time. All of this comes together in a handsome package that's ready to rock and roll the next time you head into the hills or out to the range.

BACK TO SURVIVAL

Many people (including me) have touted the virtues of the .22 LR in survival scenarios, although I tended to part ways with some on one particular virtue: Besides being accurate and versatile enough to take different types of small game, you can carry a much larger amount of rounds for a .22 LR rifle than you can for a larger-caliber weapon such as the AR-15 in 5.56x45mm (.223 Remington). Never mind the fact that .22 LR rounds are much less expensive that centerfire rounds, even at today's prices. Most people already know that, but in a long-term scenario, having a thousand rounds of .22 LR would probably be more useful than a couple hundred rounds of .223-at least for providing food.

> The clean work of the VM-22 can be seen in the action of the lightweight hunting rifle. Boasting a trigger pull of just 2 pounds, this rifle is ready for precision work.

> "WITH A HIGH-END SCOPE SUCH AS LEUPOLD'S 2-7X33MM VX-R, THE VM-22 IS A RIFLE THAT WILL TAKE CARE OF YOU FOR A LIFETIME."

That's where some folks step in and say that the .22 LR could be used in a defensive role, even though it's not as powerful as the .223. Granted, that may be true in certain situations. I have a high-end bolt-action .22 that was passed on to me, and it's incredibly accurate. However, the magazine only holds five rounds, and they are very expensive. I personally don't see a bolt-action .22 LR rifle serving well as a defensive weapon, unless the user is an outstanding shot and doesn't need quick follow-up fire.

I've tried various semi-automatic .22 rifles, and none ever came close to my bolt-action's accuracy—until now, having used the VM-22. To this point, accuracy has trumped defensive work for me as the best role for the .22 LR, because my thought is that the chances of hunting with a .22 LR are much greater than employing one in a gunfight.

Now, both functionalities can overlap, because I have the best of both worlds in one gun.

Although the VM-22 comes with a standard, 10-round, Ruger rotary magazine, Ruger has opened the floodgates lately with high-capacity magazines. It now offers the BX-25 (25-round magazine) and the BX-25 x 2 (two 25-round magazines attached together) for its semi-auto .22 LR offerings. From my perspective, this changes things a good deal.

No longer are you limited to just 5 or 10 rounds; you can have 25 to 50 rounds at

your fingertips if the need should arise. I find having that option is a more persuasive argument for using a .22 LR as a defensive weapon. Yes, there are lever-action and semi-automatic tube-fed .22 LR long arms. However, once you get through the 12 to 17 rounds, reloading the tube is a longer process—nowhere near the speed of a







The image quality and light transmission of the 2-7x33mm VX-R was excellent, and the little bit of extra reach in magnification was just enough for me to really drill home some nice groups at the range. The 33mm objective performed exactly as expected, providing a good amount of light to work with, even toward the end of these winter days.

The slightly larger ocular objective provided a nice, clean sight picture. For the type of shooting I was doing at the range, more magnification would have been better, but this is going to be a hunting rifle that would be carried a lot, and the compromise for lighter weight was necessary.

The reticle included in the 2-7x33mm VX-R was the ballistic-firedot variety, with a small circle around the red dot to help with quicker target acquisition. This reticle certainly does its job of drawing the eye in to focus on the red dot. However, at 50 yards, while shooting at quarter-sized stickers, the circle got in the way of seeing precisely where I was aiming on the stickers to get the tightest group possible. Of course, that would only matter if the shooter were going for head shots on small game.

Even out to 100 yards, the small circle helped line up quick torso shots on squirrel-sized targets with ease. The Leupold VX-R has a number of features that makes it a quality product for the avid hunter. It is fog- and waterproof and filled with a krypton/argon gas

VX-R is 30mm, so I ordered a set of aluminum TPS 30mm TSR Picatinny-style rings with a low height. These worked perfectly for me, and I ended up not having to adjust the comb height at all. The TPS rings were very solid and had a quality finish. (They are also available in steel, but the extra weight wasn't needed for the package with the .22 LR's light recoil.)

FIRING TIME

After waiting out the weather, I finally found my way to the range to put the VM-22 to the test. The first order of business was to get it sighted in, which wasn't a problem.

One detail I particularly liked about the Leupold 2-7x33 VX-R was that the user





I don't think I've ever had that much fun shooting .22 LR rounds! Usually, I get bored easily when shooting .22s, but when you see shot after shot piling up around each other, there's a lot of suspense and anticipation in the air as you finish the last round or two of a group—especially when you don't have to change magazines every five rounds. The trigger's 2-pound pull felt as if it would break with just a breath of air and made accurate shots that much easier.

One exercise I tried had me applying 25 quarter-sized bull's-eye stickers (from Thompson Target) on the back of a used target. I then filled up a Ruger BX-25 with the Wolf Match Target rounds and started shooting from the bench at 50 yards.

When the magazine was empty, all but one of the Thompson Target stickers had a hole in it. One went slightly astray, and I knew I pulled it the moment I squeezed the trigger. As part of the experiment, I used rounds from several different boxes to judge the consistency of the Wolf ammunition. It was good across the board.

One thing I noticed during the range sessions was how well the forward blow compensator did its job. Even with the negligible recoil of a .22 LR, I could still feel the difference as the compensator did its work. I was also amazed by how quiet the round sounded with the noise directed to the front of the muzzle. It certainly was in the suppression-level range, but it was close—yet another extra bonus in a rifle of this quality.

All of the ammunition I tried that day performed well enough for survival needs such as hunting small game. My go-to load, the CCI Mini-Mag, printed groups of just over $\frac{3}{4}$ inch at 50 yards. This is more than good enough for my hunting needs. But, as forecasted by Volquartsen's representatives, the Wolf Match Target rounds turned in the best group of all the range sessions, with one group coming in right at $\frac{7}{16}$ inch. You can't complain about that. Even better, with 700 rounds fired, there were no malfunctions, despite the different loads I tried—including standard-velocity, high-velocity and hollow-point rounds.

THE VERDICT

Having the opportunity to finally test a Volquartsen Custom rifle turned out to be a great educational experience (and lots of fun), and it surpassed my expectations by a large margin. In fact, I felt as if there was untapped potential when I was finished with the testing. There was no doubt this rifle could outshoot me, even from the bench.

If I were into target shooting and used a higher-power scope, I absolutely believe that ½-inch, 100-yard groups would be achievable. However, for me, Leupold's 2-7x33mm VX-R really was a great choice for the rifle's intended role as a small-game rifle.

For someone with a preparedness mindset, the VM-22 is an excellent addition to their firearm kit, especially if they're on the move with their gear. Its "superlite" weight makes it extremely portable—even as a second rifle, if one were still inclined to keep a larger-caliber weapon on hand for serious defensive work

However, with the VM-22's accuracy for hunting and the availability of Ruger high-capacity magazines, this is the first .22 rifle that I've felt could truly serve as a doubleduty weapon if it came down to it.

The VM-22's handling and carry are superb, partly due to Magpul's X-22 Hunter's stock, as well as the Superlite aluminum receiver and carbon-fiber tension sleeve. In short, it all comes together nicely to form a top-tier rifle you can bet your life on when it comes time to hit the trails. With a high-end scope such as Leupold's 2-7x33mm VX-R, the VM-22 is a rifle that will take care of you for a lifetime. **ASG**

SOURCES

- VOLQUARTSEN CUSTOM (712) 792-4238 INFO@VOLQUARTSEN.COM WWW.VOLQUARTSEN.COM
- LEUPOLD & STEVENS 1-800-LEUPOLD WWW.LEUPOLD.COM

FORMER CIA OFFICIAL WARNS:

"ISIS TERRORISTS WANT TO CRIPPLE AMERICA'S ELECTRIC GRID!"

How will you keep your family safe when the lights go out? And they will go out.

n a Washington press conference, former CIA official Dr. Peter Pry, warned, "There is an imminent threat from ISIS to the national electric grid and not just to a single U.S. city." He explained that attacks on just nine of the nation's 55,000 electrical substations could result in coast-to-coast blackouts for up to 18 months.

Frank Gaffney of the Center for Security Policy went even further, "... should the power go out and stay out for over a year, nine out of 10 Americans would likely perish." What could be a more frightening thought than that?



In San Jose, California, snipers fired on an electrical substation for 19 minutes, knocking out 17 giant transformers that provide power as far away as Silicon Valley. It took workers 27 days to restore the facility. No arrests were made. A dry run for the real thing?

YOU KNOW WE'RE TARGETED.

It's no secret ISIS and other radical groups hate

America. Their mission is to destroy us by whatever means possible. A successful attack on the grid would definitely bring about the end of the world as we know it.

WEATHER IS THE OTHER ENEMY.

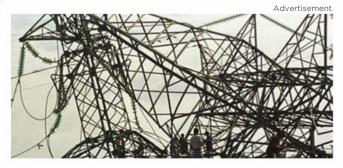
Even leaving aside a terror attack, there is the constant threat that Mother Nature could strike a vicious blow to the grid.

Remember the Polar Vortex? Only through a massive effort by grid operators were we spared total blackouts across large parts of the country.

It's happened before and it will happen again. And the vast majority of Americans will be totally unprepared for the depravation and lawlessness that often follow.

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your toaster oven, even your coffee maker... power your cell phones, computers, radios, medical devices... and so much more. You can even use it to power an electric blanket to keep you warm.



The Patriot Power Generator 1500 is an affordable, completely self-contained system that silently provides up to 3,000 peak watts of totally FREE, renewable power. And it's so easy to use a child can do it.



Includes 10 FREE Bonuses!

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ne should never leave home without a knife. Whether I'm headed into the woods or out into the city, I always have at least one folding knife on me as a matter of habit

An old Nordic proverb states, "A knifeless man is a lifeless man," and some knives excel at life-saving tasks, given their form, strength, ease of opening and manner of carry. Folding knives with critical life-saving attributes, therefore, should be part of any everyday-carry (EDC) load-out.

It might be impractical to carry a fixed blade on a daily basis where you live. Depending on your jurisdiction, fixed-blade carry may be illegal, and at your workplace, against company policy. Even an exposed pocket clip will raise suspicion of observant law enforcement in some cities.

Folding knives can be clipped out of sight or tucked deep inside a pocket when fixed blades are not an option. It's a good practice to have at least one

Top to bottom: Opinel No. 7. Victorinox Ranger, Spyderco Atlantic Salt Fallkniven II2 Benchmade Ritter Griptilian Model RSK Battle Horse Knives Tree Frog. Southern Grind Spider Monkey Al Mar SERE 2000 Chris Reeve Knives Inkosi, Daniel Koster Folding Bushcrafter, Grayman Knives Satu, Spartan Blades Akribis



THE URBAN MULTI-TOOL

The urban environment demands specific tools. Where a single large blade is ideal for the woodland environment, having a variety of tools to tighten/loosen screws, pry, file and grip is better in the city and around manmade structures. The multi-tool should be part of every urban survival kit and daily load-out. It offers significant advantages during times of crisis, as well as when handling life's little emergencies.

At the heart of most multi-tools is a set of pliers. Pliers can save hands and fingers when environmental hazards exist. They can be used to move strips of sharp metal, loosen nuts, cut wires inside walls and make holes in fence line. Pliers can remove tacks or nails, cut wire to length to repair a vehicle bumper and crack open containers by focusing the force of a hit into the small surface area at the tip.

The numerous screwdrivers built into most multi-tools help loosen and tighten screws. They can also be used for light prying not normally done with a blade for fear of breaking.

In addition, utility blades, saws and files can be used to cut through most materials found in buildings and vehicles. Each type of edge can be reserved for a specific duty. A secondary blade, such as a single large folding knife, can be left for knife-specific cutting.

Regardless of where you end up, the multi-tool will find its way into your hands when a problem or task arises.

nonthreatening blade, such as a Swiss Army Knife; and one should be larger, less politically correct and meant for serious use protecting your life from natural or manmade threats.

When selecting which knife should be carried, one must think about how quickly the blade can be accessed; if it can be reached and opened with both hands (even gloved hands); if it will be meant for light, medium or potentially heavy use; and if it will be easily retained in the hand and comfortable with extended use. One may elect to put it in a belt pouch, tuck it inside the waistband or carry it deep inside a hand-warmer pocket.

A folder may be carried more securely and is less likely to be lost than a traditional fixed blade carried in a belt sheath. Also, folding knives can be tucked inside the dimensions of many survival kit containers. When needed, they can be opened and used much easier than the

hard-back razors or scalpel blades that are normally packed.

The advantages of carrying a folding knife become apparent in use and carry. One example is ferro-rod firestarting. When using a folding knife to scrape a ferro rod, there is no reason to keep the blade open.

Unlike a fixed blade, the edge need not be exposed when creating sparks. Keeping the blade closed on a folder allows scraping the rod without risk of accidental cutting or damage to the edge.

With thousands of available folders in countless configurations of blade shapes, handle materials, locking mechanisms and other options, it can be difficult to narrow down the choices to a handful of blades ideally suited for daily needs.

Here are 12 proven folding knives worthy of consideration for bushcraft, survival or everyday carry. **ASG**







FALLKNIVEN U2

OVERVIEW

Peter Hjortberger, owner of Fallkniven, carries this knife daily. It is designed to be a no-frills working blade. The proprietary 2.5-inch laminated SGPS steel is extremely durable for extensive bushcraft carving, and it features a lightweight and clipless handle.

Minus thumb studs or assisted opening devices, this blade makes it ideal for city carry, and the sharp, 90-degree spine is one of the best fire steel scrapers available. This 1.5-ounce knife is perfect for the keychain and disappears in the pants pocket until it is needed.

MRSP

\$134.95

URL

www.fallkniven.com







BATTLE HORSE KNIVES TREE FROG **OVERVIEW**

With the design of the Tree Frog, the folks at Battle Horse Knives have addressed the potential for a folding knife closing on the user. Utilizing a dual-pin system through the handle and the blade tang, the Tree Frog becomes a quasi-fixed blade. With both pins in place, the knife can be batoned if necessary

Available in either A2 or O1 steel, the Tree Frog can be configured with traditional Scandi, flat or convex grinds on the 3.5- by 5/32-inch-thick blade. A full-sized, 4.5-inch handle makes the Tree Frog a great knife for the bushcrafter. With pins in place, the knife cannot be flicked open, thereby satisfying some knife regulations.

MRSP

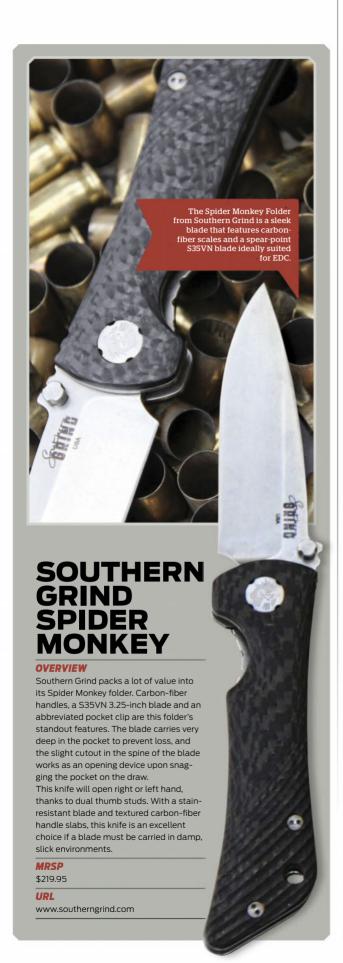
\$210

www.battlehorseknives.com

There is no need to worry about this folder closing on your hand. The Battle Horse Knives Tree Frog has dual pin safety that provides a fixedblade feel, along with a true "Scandi" ground blade

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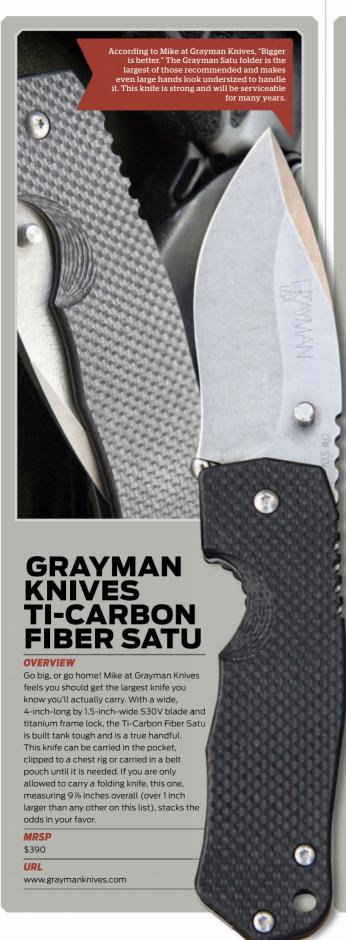
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SPARTAN BLADES AKRIBIS

OVERVIEW

The Spartan Blades Akribis is a folding knife that locks open with authority. As with the rest of the Spartan Blades lineup, there is no compromise with this knife, and it is meant for hard use. The titanium handle and 3.5inch S35VN blade are coated in PVD that holds up to sweat and prevents rusting. The carbon-fiber or G10 secondary handle scales create a hand-filling, yet easy-to-carry, blade for comfort in extended use. Close examination of this blade reveals exceptional attention to detail, including chamfering on the handle and jimping on the blade. This knife is well suited as a backup deep-cover blade (but it is the author's choice for everyday carry).

O

0

MRSP

Starting at \$445

URL

www.spartanblades.com

The Spartan Blades Akribis is a high-end folding knife with as much strength and durability as it has precise fit and finish. It is equally at home in a field kit or discreetly carried in business attire.





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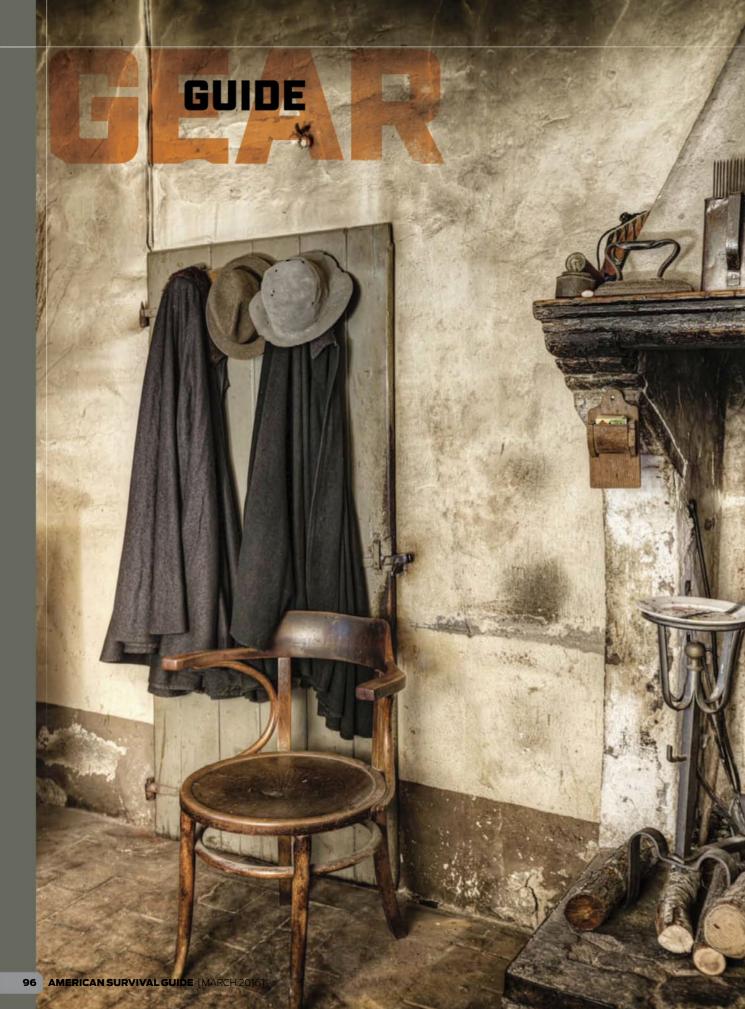
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AFTER THE BLACKOUT

GEAR FOR SURVIVING WHEN THE PLUG IS PULLED

BY MICHAEL D'ANGONA

ou never miss things until they're gone. When it comes to electricity, the lack of this omnipresent resource could turn your world upside down ... if you let it.

The idea of an electromagnetic pulse released in the upper atmosphere literally destroying all electronic circuitry sounds like science fiction. But in reality, it is a very real possibility—one that must be prepared for, well in advance.

Within moments, everyday items, even ones you wouldn't think would be affected, will not function after the initial pulse is released. From all your electronic devices to your computer-enhanced automobile to all your basic water and sewage utilities, your daily routine and reliance on these modern conveniences will no longer be the norm for you and your family.

However, when the topic of a HEMP (high-altitude electromagnetic pulse) comes up, you might hear comments such as, "The world will plunge into darkness," or "Our lives will shift back to the Stone Age." These statements are a bit dramatic and, in reality, not entirely true. Yes, things will change, and yes, you will have to

But if you start planning now for such an event, you will be far less affected by the "shock" and better suited for thriving in the days that follow.

What follows are 16 items that will help you adapt to post-HEMP conditions. ASG



The Wonder Wash

Without electricity and water capabilities, your washing machine will be "out of action" after an EMP strike. That's when the Wonder Wash comes into play.

This entirely hand-powered washing unit quickly washes your clothes without the need for a motor or water hookup. With no moving internal parts, this unit will last for years under constant use. Its lightweight design allows for easy portability, no matter where your travels take you. Enjoy the comfort of clean clothes—even during harsh and trying times.

Specifications

- · Cleans clothes within minutes
- · Fully portable
- · No electricity required
- Economical
- · Gentle on clothes
- · Eco friendly

MSRP

\$42.95

URL

www.laundry-alternative.com

4

EmberLit Titanium Portable Stove

Basic needs will become top priorities when the power goes down; this includes having purified water to drink. This compact mini-stove boils water in a pinch, no matter where you are in the world.

Just gather sticks and twigs for fuel and, within minutes, you will have a steady heat source needed to boil water. As your fire burns down, keep feeding the flames via the integrated access opening. Constructed of 100 percent titanium, this stove will last for years in nearly any harsh environment and won't weigh down your pack when traveling. The stove comes with a lifetime guarantee and is made entirely in the U.S.A.

Specifications

- · 100 percent titanium construction
- $\cdot \, \text{Lightweight and compact} \\$
- · Burns sticks and twigs
- · "Feeding action" keeps fire burning
- Impervious to corrosion
- · Quick setup time

MSRP

\$79.99

URL

www.emberlit.com

5

Sun Oven

Free yourself from the necessity for electricity: Use the power of the sun to cook your meals. The Sun Oven has no circuitry to be concerned about and no electronic dials or timers; the focused rays of the sun slow-cook your food to perfection.

Use it to boil or pasteurize water, make delicious sun tea, heat water for bathing or kill infestations in grains or other dried foods. You can also sanitize dishware and naturally dehydrate fruits and vegetables for future use.

Fuels run out, electricity can stop flowing, and fires are not always practical, but the heat from the sun is infinite and ready to assist you with all your cooking needs.

Specifications

- · Bake, boil or steam
- · Food stays moist
- · Multi-item cooking
- · Simple to operate
- · Temperature range: 360 to 400 degrees (F)
- · Made in the U.S.A.

MSRP

\$349

IIDI

www.sunoven.com





8

Hand Crank Mixer/ Food Processor

The Lttle Dutch Maid is the ultimate multipurpose food processor—hands down! And, best of all, it's entirely human powered.

This amazing machine is built with the highest-quality German parts similar to those found in high-end electric mixers. The outer shell is extremely durable and solid and will last for years with regular use. Its interior gears won't wear down, and they allow for a smooth operation when mixing dough or processing foods. The mixer comes complete with a standard, 4-quart, heavy-duty bowl, as well as a splashguard and cover. Optional accessories are available

Specifications

- · Two-speed hand crank system
- · Easy cleanup
- · Extra-heavy-duty construction
- · White powder coating
- · Stainless steel and aluminum body
- · Processes dough in minutes

MSRP

\$516.95

9

Canning Kit

After the power is gone, your food supply might have to last longer than expected. Prepare ahead of time by canning some of your own foods to extend shelf life from days or months to years.

The Victorio canning kit contains all the essentials needed to properly preserve foods: a large, 20-quart pot for boiling water, a canning funnel, magnetic lid lifter, jar lifter, jar wrench and scrubbing brush for easy cleanup. Store shelves might be wiped out, but your pantry will be stocked for years.

Specifications

- · Built-in thermometer
- · Canning jar capacity: 8 pints/7 quarts
- · Glass lid allows easy viewing
- · 20-quart liquid capacity
- · Saves money
- · Extends food life

MSRP

\$82.95

URL

www.beprepared.com

10

Old-Fashioned Drip Coffee Maker

An EMP strike would force you to become selfsufficient, and adding this coffee maker to your supplies puts you on the right path. The coffee maker's design is from years past, but its materials and efficiency are top of the line.

Its two-step filter chamber has a removable cap that holds the coffee grounds, and its bottom section may also be used for hot water, if tea or other warm drinks are desired. A cup of hot coffee is a comfort under normal conditions; during a survival situation, it's a "lifesaver!"

Specifications

- · Perfect for campsites
- · No filter needed
- · Makes up to 10 cups
- · Non-electric
- · Food-grade stainless steel
- · Two-step filter chamber

MSRP

\$79.95

URL

www.cottagecraftworks.com





12

Stainless Steel Meat Grinder

When you capture wild game, don't limit yourself to eating chunks of meat; make delicious sausage and jerky, too. This stainless steel, hand-powered grinder is perfect for use nearly anywhere without the need for electricity. Its extra-wide clamp attaches the unit firmly to your table and features plenty of clearance underneath to catch the grinds. The grinder comes complete with stainless steel $^3/_{6^-}$ and $^3/_{8^-}$ inch grinding plates, a cutting knife, and $^1/_{2^-}$, $^3/_{4^-}$ and $^1/_{4^-}$ inch stuffing tubes. You'll be enjoying delicious sausage in no time flat.

Specifications

- · Durable construction
- · Large hopper
- · Attaches easily to tabletop
- · No electricity needed
- · 8-inch handle
- · Easy to operate

MSRP

\$89.99

URI

www.sausagemaker.com

13

Inflatable Solar Light

"Simple and effective" is the phrase that describes this miracle device. Just use the rays of the sun to power this inflatable "lantern" and light up your campsite, home or bugout location.

The Luci EMRG Solar Light's unique design makes it durable if dropped, as well as effective (even if wet). It will continue to illuminate long after the sun goes down. Recharge the light in direct sun during the day, and enjoy up to 12 hours of light. When stored, this lantern retains an amazing 95 percent of its charge per month and will operate in extreme temperature ranges (15 to 122 degrees [F]). This lantern stores easily in packs or bags when it is deflated.

Specifications

- · 10 bright LEDs
- · Lightweight and durable
- · Fully waterproof
- · No batteries needed
- · Bright output
- · Use anywhere

MSRP

\$9.99

URL

www.mpowerd.com

14

Vogelzang Durango Wood Stove

Prepare well ahead of an EMP blast by installing a wood stove in your home today.

This heavy-duty stove is designed to produce an extremely hot flame while extending burn time up to 12 hours. It is constructed of heavy-gauge steel plate and is guaranteed to work hard for you for many years. Winter can be deadly without warmth, and this stove can provide you with the heat you need to make it through a harsh season. Stock up on wood, and free yourself from reliance upon electricity.

Specifications

- · Heavy-gauge 3/16-inch steel plate
- Turbo Burn™ technology
- · Low emissions
- · 2.2 cubic-foot, brick-lined firebox
- · Cast-iron feed door
- · Over 75 percent efficient

MSRP

\$729.99

URL

www.northerntool.com

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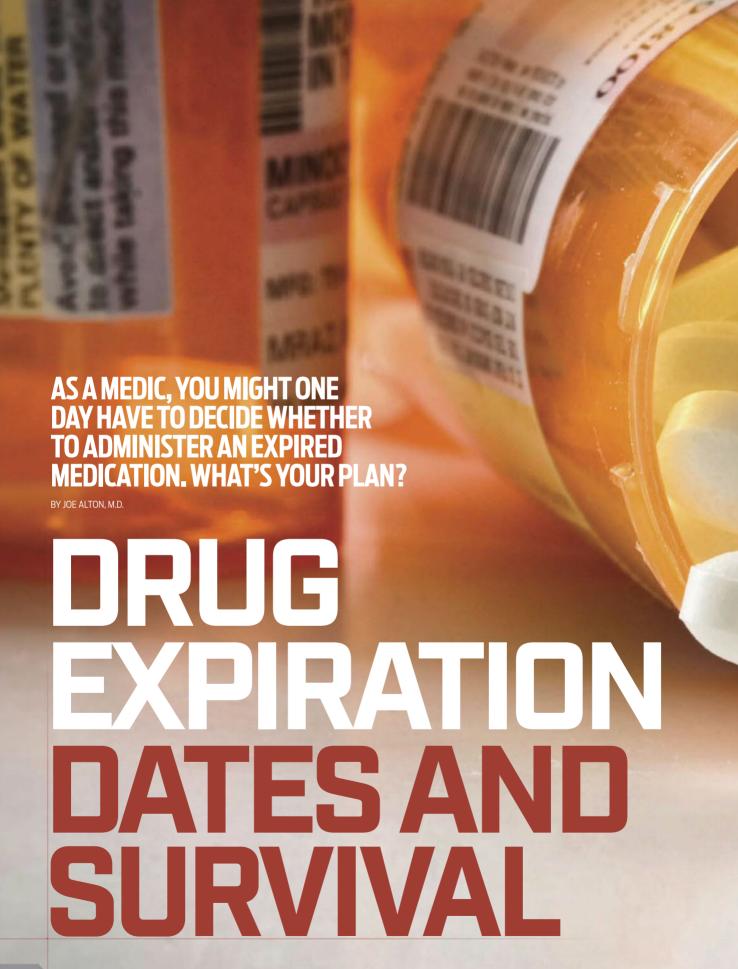


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"IT [FDA] TESTED
MORE THAN 100
DRUGS THAT HAD
BEEN EXPIRED
FOR ONE TO
15 YEARS AND
FOUND THAT
90 PERCENT
OF THEM WERE
STILL FULLY
POTENT AND
CONSIDERED
SAFE."

According to one survey, about 70 percent of people wouldn't take an expired pill.

n a disaster, especially a long-term collapse, the family medic must be able to handle many emergencies. Some of these are clearly survivable, such as a broken finger, and some are not, such as a bullet to the brain. A realistic attitude toward this hard fact won't make decision-making easier, but it might make it clearer.

Your goal as the sole medical asset in an austere setting is to prevent the avoidable deaths.

One significant way to accomplish this is to pay strict attention to prevention. The medic's responsibilities include making sure water is properly sterilized, food is prepared safely, and activities of daily survival are performed with appropriate clothing and protective gear. This will avoid a lot of headaches and greatly increase your chance of success when everything else fails.

Another way to keep your people healthy is to have medications and supplies to deal with the issues you'll encounter as a medic. Bandages, antibiotics, pain relievers and numerous other items will be important in your mission to keep people healthy. But what happens when these items expire?

Before I begin, I want to tell you that my focus is medical preparedness for major disasters and long-term survival. This means a strategy of putting together stockpiles of supplies that might save a life in times of trouble. In normal times, when you can just call your doctor for a fresh prescription, you should seek out modern care by qualified professionals.



WHAT'S AN EXPIRATION DATE?

Let's start by examining what an "expiration date" really means. It is defined as the last day a pharmaceutical company will guarantee a drug's full potency. These dates weren't mandatory until 1979 in the United States, and printing them on labels brought



up a lot of questions: Do you throw them away when they expire? What happens if you take them after the date on the label? What if a disaster takes away the ability to manufacture fresh supplies?

These very guestions were asked by the U.S. Department of Defense. With a billion dollars' worth of drugs stored away in warehouses for military and civilian use, the DOD faced the physical and financial challenge of destroying and replacing millions of doses on a regular basis. As you might imagine, this gets pretty expensive.

The drug companies' data didn't help. There was no requirement to test for effectiveness any longer than the expiration date. This led the military to begin studies that could determine if it could extend the shelf life of its massive inventory.

THE SHELF LIFE **EXTENSION PROGRAM**

This evaluation, done in conjunction





Massive drug inventories reach ing expiration dates

eventually became known as the Shelf Life Extension Program. It tested more than 100 drugs that had been expired for one to 15 years and found that 90 percent of them were still fully potent and considered safe. These medications were mostly the ones in pill or capsule form. Notable exceptions were nitroglycerin, insulin, epinephrine and antibiotics in liquid form.

This wasn't a lone study but a series of tests that spanned decades. Unrelated studies showed similar results. A report in the medical journal, Archives of Internal Medicine, evaluated some drugs that were 28 to 40 years expired. Twelve out of 14 active ingredients were still found to be fully potent.

Despite these findings being made public from time to time, most people still believe that a drug shouldn't be taken after the expiration date, and a number of civic programs, often sponsored by pharmaceutical companies, actively encourage the disposal of meds as soon as they expire.

As if the Shelf Life Extension Program does not exist, even the FDA offers instructions on trashing expired medications. Indeed, when interviewed in 2000, a former FDA expiration date compliance chief believed that many at the agency didn't know about the program at all.

This is despite a number of emergency use authorizations for expired drugs being quietly issued over the years. During the swine flu epidemic of 2009, a five-year

emergency use authorization (EUA) was given for the anti-viral drug Tamiflu. This meant that the government authorized the use of the medication for five years after the date on the label. A number of other drugs have been extended over the years for similar reasons.

Why does shelf life extension data sit silently on the, um, shelf? There is a small savings for the individual consumer—but a lot to lose for drug companies.

Imagine a politician running on a platform of saving the consumers money by not throwing out expired drugs. The opposition would say, "My opponent is trying to make you take stale drugs." The public has been conditioned to think that they somehow become dangerous when they expire.

This isn't the case in the grand majority of cases. The classic example given for a "dangerous" expired drug is Tetracycline. In 1963, the *Journal of the American Medical Association* linked a case of kidney damage to the antibiotic. This case, however, involved a form of the drug that is no longer in use.

Although few instances of complications have been reported, some university professors and even Tetracycline's *Wikipedia* entry still consider it dangerous when



Store drugs in cool, dark, dry

Pills last longer in dark bottles that protect their contents from the light. expired. Doxycycline, a member of the same antibiotic family, was given an emergency use authorization in 2010 for several years after its expiration date.

With all the scary press over the years, about 70 percent of people surveyed would not take a prescription or over-the-counter drug after the expiration date. The military throws out intravenous bags of normal saline because of the response when a serviceman sees that that it's beyond the expiration date. Even charities that send medical supplies to disaster areas in underdeveloped countries will often refuse expired drugs.



"MANY PLANTS HAVE MEDICINAL BENEFITS THAT HAVE MADE THEM INVALUABLE IN OFF-GRID SETTINGS."

That's the public's opinion, but does it make sense from a survival standpoint?

STORING MEDICATIONS

This brings us back to you—the medic. It's been awhile since the collapse happened, and the medications left in your storage have all expired. They are not being made anymore, so no fresh supplies are coming. There aren't any rescue helicopters or ambulances heading in your direction. You might one day have to decide whether or not to use an expired medication. What's your plan? It would be wise to first know how to extend shelf life with good storage practices.

THE CONDITIONS SHOULD BE:

DRY: Medications are commonly stored in the worst place possible: the bathroom. Bathrooms are the most humid areas of the house, and drugs should always be kept in dry conditions. Many medicines have little packages called "desiccants" in the bottle. Don't remove them; they are there to absorb moisture.

DARK: Light has a tendency to speed the loss of a drug's potency. This is why many medicines are stored in brown or amber bottles. Keep all meds in a dark place and, preferably, in their original containers.

COOL: Although drugs usually don't benefit—and might even be damaged—from freezing temperatures, they retain potency twice as long at 50 degrees (F) than at 90 degrees (F). Keep them in the refrigerator or other places where they won't be exposed to heat.

Here's another way to extend the longevity of your medicines: Grow your own. The hard facts are that if a disaster situation lasts long enough, you'll run out of pharmaceuticals. There are, however, other options—the plants in your own backyard.

Many plants have medicinal benefits that have made them invaluable in off-grid settings. The underbark of willow trees, for example, contains salicin, the ingredient used

DID YOU

Medications should be stored in an environment that is-

in the first aspirins. Natural herbs and other remedies act as drug "extenders." will work for minor ailments and decrease the rate at which you deplete the meds you have. At the very least, they will give you a shot at reaching expiration dates with some medicine still in your storage.

The effective medic knows what herbs treat illnesses and injuries. Your ancestors used them for many different medical problems. Somewhere along the line.

The wise medic stockpiles supplies and medicines



> Insulin is one of the drugs that quickly lose potency.



> A variety of medications maintain their efficacy far beyond their expiration dates. However, research into the types that you would likely stock is suggested to be sure there are no potential problems with a given medication.



the knowledge was lost; but it can be found again with a little time, effort and education.

THE MEDIC'S DILEMMA

All this, however, doesn't prepare you for the decision you might one day have to make as family medic in a disaster. Someone is sick or hurt, your medicines are expired, and you have to choose whether or not to use an old drug.

In a disaster, the decision-making process might come down to asking yourself





> Should the offgrid medic withhold an expired drug from a sick person?

some basic questions. Of course, the first is, "What's the problem?" The second is, "Do I have medicine that will treat it?" If you've been off the grid long enough, the third question might be, "Could this medicine, even if it has expired, possibly save a life?"

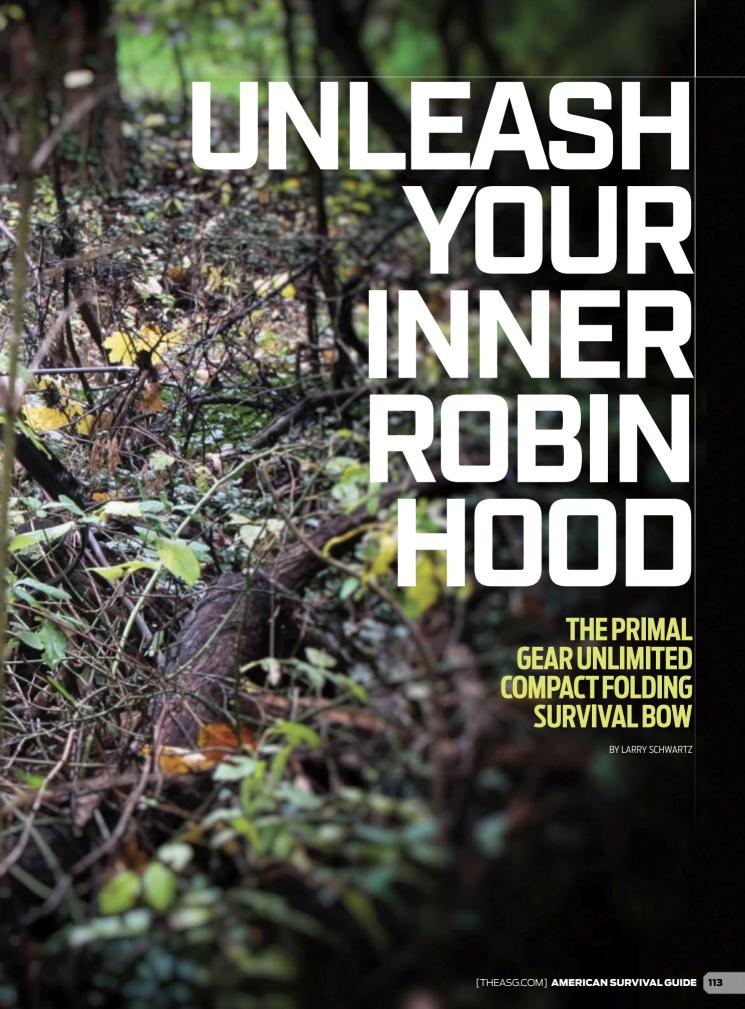
Let's be even more specific. A loved one is fading from an infection. Something bad has happened, and you're off the grid—with no hope of getting to modern medical care. You have an expired bottle of antibiotics. What are you going to do? Someone you love is dying. Are you going to use the expired drug or not?

Exactly. When it comes down to the nitty-gritty, you have to do what you can with what you have. In this situation, you really can't withhold a drug that might save a life because some professor said it wasn't a good idea to use it. He or she wasn't seriously considering a time when an expired medication might be the only option you have left. **ASG**

Joe Alton, M.D., is a physician and co-author of the Survival Medicine Handbook, as well as the founder of www.doomandbloom.net.









to repair, and they can't shoot the same bullet twice.

The bow and arrow, on the other hand, can be used for the same purposes of hunting and protection, albeit not from the same ranges. In addition, they are much easier to maintain and repair, and you can shoot the same arrow hundreds

of times. Also, you can re-sharpen your hunting broadheads when needed.

Compared to a firearm, their light weight also makes them great for inclusion in your emergency gear. Because a bow and arrow don't give off a loud bang, they are also a good choice if you don't want people to know you are hunting in the area.

There are a few companies that make takedown bows designed for inclusion in survival gear or bugout bags. The Compact Folding Survival Bow (CFSB) from Primal Gear Unlimited is the only one that comes already assembled and ready to use.

EQUIPMENT FOR EVALUATION:

- 1 Primal Gear Unlimited Compact Folding Survival Bow
- 2 Six takedown carbon arrows
- 3 Primal Revolution Tactical Ouiver
- 4 Hard case
- 5 Bowstring





When you get your CFSB, you will want to set the brace height so you can get good arrow flight. Brace height is the distance from the point where your hand meets the bow's riser/handle to the bowstring, where you have your nocking point set. The brace height should be between 6.5 and 8.0 inches.

Most likely, the string will be too long when you get it, so after you string the bow for the first time, check the brace height and then set it for at least 6.5 inches. If you don't. and the string is not short enough, it will release the arrow too close to the riser. As a result, the feather fletching might cut your hand, or the string might hit your forearm, giving you a nasty bruise.

Adjust the brace height by making the bowstring longer or shorter. Do this by unstringing the bow and removing the top end of the string. Then, twist it to make it shorter or untwist it to make it longer. By moving the brace height a half-inch or so at a time, you will eventually find the height at which the arrow flies the best and the bow makes the least amount of noise when shot.

Once you determine the correct brace height for your bow, a good way to remember it is to write it on the upper limb. An even better way is to put an arrow on the string and mark the arrow where it crosses the riser, essentially turning it into a ruler you can use to measure your brace height.





Make sure you have set your brace height and nocking point properly before you take that first shot. If not, you might wind up with a painful reminder about how to set up your longbow.

 Brace height, also called fistmele, is measured from the place where vour hand meets the riser to the bowstring.



"THE DIFFERENT WEIGHT LIMBS CAN EASILY BE SWAPPED BY UNDOING SOME SCREWS, REMOVING THE CURRENT LIMBS, PUTTING IN THE NEW LIMBS AND THEN REPLACING THE SCREWS."

The CFSB is a longbow. The riser is made from a billet of aircraft-grade aluminum, and the dimensions are 23x1.5x1.5 inches. A groove is machined down the middle, and a sight window with arrow rest is cut into the side. Felt dots are placed on the arrow rest and arrow plate portions of the sight window for a quiet draw and release of your arrow. You can hold the bow with the sight window on the left side if you are right-handed or viceversa if you are left-handed. The bow shoots the same either way.

The limbs of the CFSB are made of solid pieces of fiberglass cut to shape. They come already attached to the riser and fold down into a slot for transport and storage. When ready to use, they fold back out and are held in place by a rotating bolt.

Primal Gear Unlimited offers its CFSB in three draw weights: 40, 50 and 55 pounds. The different weight limbs can easily be swapped by undoing some screws, removing the current limbs, putting in the new limbs and then replacing the screws.

The company also offers a bow-fishing model—the Primal Fisher, which is just like the regular CFSB but is threaded to accept a fishing reel that you can attach to a bow-fishing arrow. With the addition of the reel, you can also take fish and stingrays, in addition



to small and big game. The bow does not come with a quiver or arrows. Those must be purchased separately.

THE TAKEDOWN ARROWS

The takedown arrows are made from 400-spine carbon arrows with feather fletching. The arrow is cut in half, and a set of aluminum inserts (one male and one female) is glued into the two halves so they can be screwed together to make a complete arrow. Although they hold together well, applying some beeswax to the threads will help them stay tight over the course of multiple shots.

The takedown capability makes these arrows easier to transport while backpacking or traveling, as well as conceal in your pack or bags if you are trying to hide the fact you have a weapon with you.

The folks at Primal Gear Unlimited have tested the arrows to ensure they fly well from all three draw weights. Depending on your shooting style, some modification might be needed regarding where you aim if you change limbs.





> Nocking points help ensure you always put the arrow on the string at the same location and at the right height for good arrow flight. Position them slightly above the perpendicular to help ensure they leave the riser without hitting your hand.



INSTALL THE ARROW NOCKING SET

Once you have your brace height set properly, you can install the nocking points on your bowstring. The nocking the same place every time. The location of the nocking points should be a quarter-inch or so above where the bowstring.

nocking points are the most popular and are crimped to the bowstring with a pair of small nocking pliers. Heat-shrinkplace and then use a lighter or hot-air drier to heat them up

same material used to make the bowstring) and wrap it around the string several times until it builds up enough to be used as your nocking set. Then, tie it off.



PICK THE RIGHT HEAD FOR THE RIGHT PURPOSE

"IT IS EASY TO USE, EASY TO CONCEAL, QUIET IN USE AND HAS MANY USES—FROM HUNTING AND FISHING TO SELF-PROTECTION TO MARKSMANSHIP PRACTICE."

Over the centuries, archers and hunters have developed dozens of different points to attach to the end of their arrows, depending on what they were trying to do. Although you don't need to pierce the armor of mounted knights, as the English longbowmen of the 15th century had to do, or send a whistling arrow through the air to warn of approaching danger, you will be well served if you keep a variety of different arrowheads with your CFSB.

- Field points are used mainly for practice, shooting at targets or roving through the woods, shooting at leaves, dandelions or rotten stumps to sharpen your aim.
- 2 Blunts and small-game hunting heads can also be used for roving, but are intended for hunting small game, such as rabbits, squirrels and birds.
- 3 Spring-loaded heads, such as the Zwickey Judo or the Muzzy Grasshopper, have wires sticking out from the head so they catch in the grass and leaves. This helps prevent them from getting lost under the clutter on the forest floor. They can also be used for both roving and small-game hunting.
- 4 Broadheads are two- or three-bladed heads used for hunting medium- to large-sized game animals, such as deer, bear, wolves and coyotes. These arrow heads should be kept razor sharp to bring down your game quickly.



Form is essential when shooting a bow. You need a straight back, extended bow arm and a solid anchor where your hand and bowstring meet your face.



THE QUIVER

The Primal Revolution Tactical Quiver is a 23-inch quiver made of Cordura nylon with MOLLE webbing on the exterior for adding pouches for items such as shooting gloves, arm guards or extra bowstrings and arrow points. The interior is one large compartment with a hook-and-loop strap. You can use the strap to hold the collapsed longbow in place and pack your full length or takedown arrows in the rest.

The quiver's straps allow it to be worn on the hip as a side quiver or across the back as a back quiver. Using the MOLLE straps, you can also attach it to any pack or belt that also has MOLLE attachment points.

OTHER PRIMAL GEAR EQUIPMENT

In case you don't already have any archery or bowhunting gear, Primal Gear Unlimited stocks everything you need. By checking out the various sections of the company's website, you can order arm guards, shooting gloves, quivers and hard cases. Also available are bowstrings and accessories, such as nocking points, string wax, bow-fishing equipment and all the different arrow points you need.

As you can see, a takedown longbow such as the excellent one made by Primal Gear Unlimited is a great addition to your emergency gear, whether you plan to use it at home or during a bugout situation. It is easy to use, easy to conceal, quiet in use and has many uses—from hunting and fishing to self-protection to marksmanship practice.

If you're looking for a well-designed tool to help you survive in the woods while maintaining a stealthy profile at the same time, this compact and lightweight bow is worth checking out. It can serve as a backup up to your firearm, or it might just be all you need to make it through to the other side. **A56**

SOURCE

- PRIMAL GEAR UNLIMITED (912) 519-0120
- WWW.GOPRIMALNOW.COM

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FARADAY DEVICES

YOUR LAST LINE OF DEFENSE **AGAINST AN EMP**

BY MICHAEL D'ANGONA

echnology is a wonderful thing. Today, personal data, media files and other information can be stored inside your computer, cell phone or tiny, handheld flash drive that can be taken with you wherever you go. These devices have also evolved immensely in recent times; so much so, that our reliance upon these devices is at an all-time high.

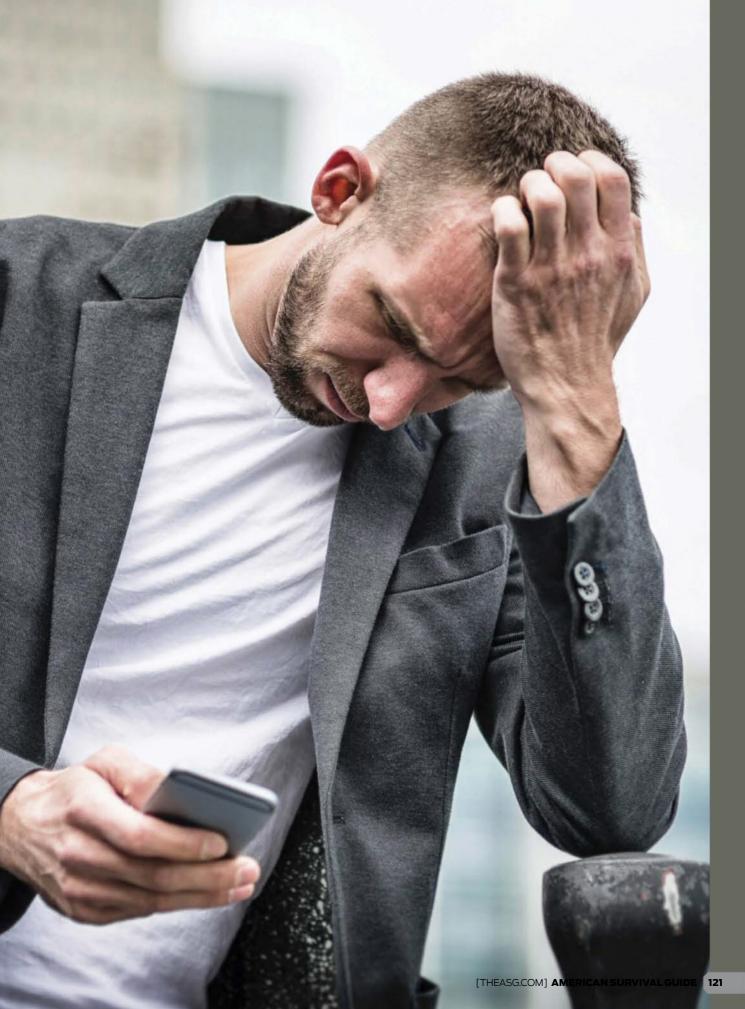
But all this increased technology has a down side. It is an Achilles heel just waiting to be targeted—by a high-altitude electromagnetic pulse. In an instant, all your data could be gone and your electronics fried, becoming no more than useless paperweights. A nuclear detonation over our country might very well make this happen.

What can you do to protect your valuable information and sensitive electronics?

You can protect them in an EMP-proof Faraday encasement device. A Faraday cage, or box, sleeve or even full-sized bunker can shield all your sensitive electronics from the effects of an electromagnetic pulse and keep them functioning during survival situations.

As a result, if and when the electrical grid once again becomes functional, you won't be on a waiting list for new electronic devices. You will have what you need, along with all your personal data and information. It will be easy for you to return to you life as it was before the world's technology took a giant step ... backward. ASG





GUIDE



Fawkes Box

Hide your personal information during normal times and protect your devices during an EMP strike with the Fawkes Box. This relatively low-tech device can prevent your cell phone from being tracked or hacked by blocking a variety of wireless signals.

This unit comes with a flexible internal sleeve and a hard-shell protective case that makes your phone virtually invisible to others trying to obtain your vital information. Calls go directly to your voicemail with your phone secure within the box. During an EMP strike, your phone's sensitive electronics will not be damaged.

- · Low-tech protection
- · Hides your phone's signal
- · Affordable protection
- · Blocks cellular, Bluetooth & Wi-Fi signals
- · Protects from hacking
- · Fits most cell phones

\$49.95

www.fawkesbox.com



Faraday Box

This could be your ultimate defense against a HEMP (high-altitude electromagnetic pulse) strike. A Faraday box protects all your sensitive electronic equipment from being "fried" and rendered useless if such a malicious attack occurs near your hometown. Simply place all items within the box, close and seal the lid, and forget about it. The worry about damaged equipment is virtually eliminated. Today, with most important personal information on computer hard drives, flash drives and other electronic media devices, you can't afford to lose and never recover such important information. The Faraday box is manufactured of heavy aluminum and features three separate lid-to-box gaskets for ultimate protection.

- ³/₁₆-inch aluminum plate
- · Six stainless-steel clamps
- · Stainless-steel handles
- · Built-in ground lugs
- · Casters for easy mobility
- · Rugged powdercoat finish

\$4.495

www.montiegear.com



Must-Read Book

Disaster Preparedness for EMP Attacks and Solar Storms examines two possible world-ending scenarios: an EMP attack or severe solar storm. Both events would essentially leave us with no electricity for many years, disrupting the daily lives of those who didn't prepare ahead of time. This book gives valuable information on basic practical preparation, how to survive without basic utilities and how to create your own homemade Faraday cages. It's packed full of statistics, discussions and basic facts helpful for your survival if or when an attack occurs.

- · Examines two end-of-the-world scenarios
- · Expanded edition
- · Reviews preventative measures
- · A must-read for all survivalists
- · 25 additional discussion pages
- Paperback

\$13.46

www.amazon.com



The Modular Faraday Cage

Sometimes, you need to protect numerous and/ or oversized electronic items: this structure can help do just that. The modular Faraday Cage is constructed to withstand an EMP strike and is built tough to last for years. The shielded enclosure consists of panels made from 2mm MuFerro steel, galvanized to offer exceptional corrosion resistance. It is designed to be able to be modified, moved and reinstalled wherever needed using only conventional hand tools. Customized items are available, including shielded doors, shielded piping, a lightweight version and many entry panel

- Resistant to corrosion
- · Self-standing structure
- · Provides high shielding
- · Smooth exterior
- · Functional interior
- · Easy to modify

Pricing based upon customer specifications

www.hollandshielding.com



EMP-Proof Bunker

Combine the best of both worlds with a heavy-duty survival bunker that also protects from an EMP strike. Rising S Bunkers is one of the leaders in survival bunker manufacturing. This bunker is completely customizable in nearly every aspect of construction, so you can make your bunker your way.

Choose the size of the unit, plumbing, electrical, defensive additions, surveillance systems, hidden doors, escape tunnels and much more. No matter the emergency or crisis, your electronic equipment will continue to function while other people's "stuff" fails and becomes inoperable. Customer privacy is top priority before, during and after construction. This bunker is a must-have for the serious prepper!

- · Rubber-coated structure
- · Highly customizable
- · Extra durability
- · Defensive additions
- Numerous amenity options
- · Customer privacy

Starts at \$39,000

www.risingsbunkers.com



Black Hole Faraday Window Bag

You never know when an EMP strike might take place, so reduce the risk by protecting your electronics when not in use. This small Faraday bag is perfect for holding your cell phone or other small electronic devices (such as GPS units, Bluetooth receivers and MP3 players). The bag's rugged construction will last long under harsh conditions, while its electromagnetic protection. will aid in keeping your items operating at full capacity.

- Effective EMP shielding
- Wear-resistant canvas
- · Highly durable
- · Integrated note slot
- · Perfect for cell phones
- · Holds small electronic devices

\$58

www.teeltechcanada.com





Faraday Jeans

Overview

An EMP strike can happen anytime, and the odds are that your cell phone will be with you and not secured in a Faraday bag. Now, you don't have to worry. These unique jeans offer protection from data hacking, as well as from electromagnetic waves. The pockets of these jeans are lined with silver linen that acts as a built-in Faraday cage for your portable, pocket-sized electronics. The jeans are comfortable to wear, easy to wash and, best of all, they protect your "mini-computers" while you're on the move. Hackers will be stopped cold when they try to steal your personal credit card information from your wallet. These jeans are a must-have in today's technological age.

Specifications

- · 100 percent cotton
- · Four silver linen-lined pockets
- · Highly comfortable
- · Quality materials
- · Protects from data hacking
- · Numerous styles and colors

MSRF

\$356.70

HD

www.thefaradayproject.com



Faraday Bags

Overview

Think you won't need a lot of Faraday bags? Think again. One family, alone, could have two or three small electronic devices per family member—babies included! Cell phones, tablets, MP3 players and mini-laptops all need to be protected from an unexpected EMP blast. These Mega-Kit ESD/EMP 7 Millimeter Faraday Bags will get you through. The variety (four sizes) and amount (40) of Faraday bags allow you to choose the best fit for all your devices without wasting unneeded space. All bags have super-tough construction with five-layer protection from electromagnetic energy; a 7.0mm moisture barrier to keep everything dry; and a 30-pound puncture-resistant shell. Together, these features offer maximum protection from everyday

Specifications

- · Five-layer EMP bag
- · 6550 PSI tensile
- · 7mm moisture barrier
- 30 pounds of puncture resistance
- · Lead-free bags
- · ROHS compliant

MSRP \$109.99

Ψ10 J.J

JRL

www.faradaydefense.com



Faraday Cage

Overvieu

Everyone has different items to protect during an EMP strike. Customize this Faraday cage to your specific needs. Built extremely lightweight and easy to move, this cage will protect your electronics without weighing you down and without the worry of not having enough space or accessibility. Choose how big you need the cage, where you want its doors and the perfect spot for cable access. The cage is constructed of an ultra-fine nickel-copper mesh that provides a highly effective electro-conductive surface. You'll be worry free if or when a worst-case scenario comes your way.

Specifications

- · Lightweight aluminum frame
- · Flexible design
- · Reduces EMI contamination
- · Easy-access interior
- · Ultrafine conductive mesh shell
- · Custom, made to order

MSRP

Price varies depending upon customization

URL

www.herzan.com

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Aluminum Conductive Tape

Overvier

Building your own Faraday cage? Don't forget the small details: You will need to seal and secure the outer shell with silver aluminum conductive tape. Electromagnetic energy must be dispersed, so you can't afford to leave any surface area uncovered. This tape is a simple item that can make or break the effectiveness of your cage. Use it to cover hard-to-reach corners, secure torn or ripped foil sheets, or just to reinforce your entire structure. This tape is a must-have item for every do-it-yourselfer.

Specifications

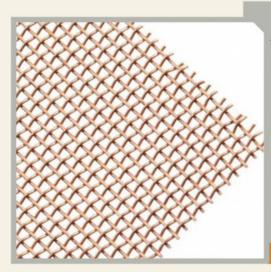
- · Used for EMI/RFI shielding
- · Suitable for applications requiring excellent electrical conductivity
- · Dead soft 1-ounce aluminum foil backing
- Electrically conductive acrylic adhesive
- · Meets UL 510 flame-retardant guidelines
- · Useful for cable-wrapping applications

MSDI

\$5.40

IIDI

www.amazon.com



Copper Wire Mesh

Overview

Perfect for indoor use, this woven pure copper mesh is the backbone of your homemade Faraday cage. The mesh is highly flexible, making it very easy to handle. It can be cut with simple household scissors. The mesh will conform effortlessly to nearly any shape for your own specific cage design or can lay flat for

more-traditional boxes. If needed, the copper mesh is easy to solder and is trouble free when connecting a ground cord. Don't settle for meshes that are less effective; this outer shell for your cage will protect your electronics from the worst that man or nature can throw at you.

Specifications

- · 16 wires/inch
- · 68 percent open
- · 36-inch width
- · Highly transparent
- · Highly conductive
- Cuts easily with scissors

MSRP

\$11 per linear foot

URL

www.lessEMF.com



Black Hole Large Faraday Tent

Overviev

This Faraday tent offers you full, room-sized protection against an EMP attack without the need for remodeling your home or digging a costly bunker. Now, you can set up your "base camp" within this protective shell and keep all your electronics safe and functioning.

The tent assembles in 10 minutes and comfortably holds two or three individuals, as well as desks, tables and all your needed equipment. The package includes the Faraday tent, collapsible outer structure, ventilation system, LED lighting, filtered AC power box, user manual and more. Built tough, this unit will last the test of time.

Specifications

- · Double-wall construction
- · Reinforced common stress areas
- · Quick assembly and takedown
- $\cdot \ \, \text{Cooling fan ventilation system}$
- · 60 dB to 70 dB signal attenuation
- · Double door system

MSDD

Varies according to size

URL

www.faradaytents.com

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REVIEW BY JD HUGHES

A STATE OF DISOBEDIENCE

BY TOM KRATMAN

magine, if you will, a world where an upstart first-term senator from Illinois didn't win the 2008 election. A world where a former first lady and New York senator became president of the United States.

Wilhelmina Rottemeyer has just become the most powerful person in the free world. Swept into the White House on a wave of progressive optimism, Rottemeyer has been given a mandate by a naïve electorate that hopes she represents a change from the old guard who have run the country for too long. Her agenda is socialized medicine, higher taxes on corporations and the 1 percent, strict gun control and more. She intends to build a liberal utopia.

Now, all she has to do is create the police state she needs to enforce her agenda and help her remain in power. Step one: a federal police force. Using the FDA, surgeon general and ATF, she will put a million officers on the street, answerable only to her. Step two: Bypass the 2nd Amendment by taxing private firearms out of existence. She has the proles eating out of the palm of her hand.

But there is one thing she forgot ... you don't mess with Texas.

Of course, the novel portrays a perfect storm: a Congress controlled by a democratic majority, a politicized Supreme Court and a president who is willing to ignore the Constitution to do what she believes needs to be done, no matter the price.

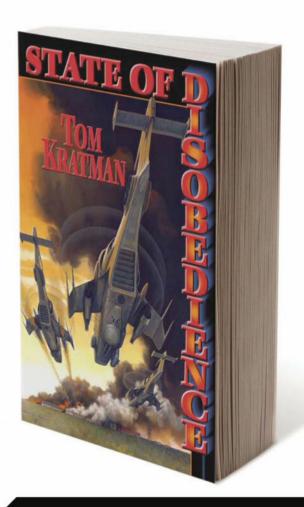
There are those who feel we have been living in this world for the past seven years. Of course, when the author wrote the novel, social media and YouTube had yet to achieve complete saturation. What could the president get away with today in the world of tweets and viral videos?

A State of Disobedience author Tom Kratman is a retired Army officer and writer of science fiction novels and political blogs. His books include the Carrera series, set in a future colonial world where, after a 9/11-style attack, a private military contractor takes on a job the world's governments won't: destroying the terrorists—root, branches and all. He also wrote Caliphate, a scarily prophetic and topical novel set in a future Europe where demographics have created an Islamic state.

What does a novel with an overt political agenda have to do with survival? Just as surviving a plane crash in the wilderness requires different skills than preparing for a power outage during winter, recognizing the signs of political oppression is equally critical to survival. Might reading about a fictionalized civil war help you see the signs of a real one brewing? Do the racial tensions, political divisions and worsening state of international affairs indicate a downward spiral? Or is this just the way things are

A State of Disobedience is really a manifesto of everything Kratman feels is wrong with the left and where this would take the country. From taxes and gun control to politically correct speech, he lays out where he thinks the country is headed.

Whether you're a paranoid, old-school bunker-and-guns survivalist or just a political news junkie, reading this book will give you something to think about before you cast your vote. **ASG**



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VAST R D S

THE LITTLE THINGS

hreats can come from all directions, and each type of threat can have multiple vectors to create havoc in our lives or on our country's infrastructure. In this issue of *American Survival Guide*, we discussed various topics related to problems dealing with the impact of losing power and technology because of a high-altitude electromagnetic pulse. While it's possible, it's not a high-probability scenario.

However, there was a recent investigation by the Associated Press into multiple cyber-attacks against our national power grid system, several of which were aimed at Calpine Corporation, which has 82 power plants in 18 states and Canada. After much research and time spent following the trail back on some of these attacks, indicators pointed not only to hacking groups, but also to countries such as Russia, China and Iran.

Probably the scariest thing learned once these "attacks" were discovered was that merely a lot of information gathering was happening—but there were no steps taken to try to disrupt any systems.

Why is this scary? Some researchers believe these were stealth initiatives to not only obtain information, but to also install software that could take control of a facility during a coordinated campaign against our country.

Essentially, think of this as foreign powers installing little "sleeper cells" into our power infrastructure that can be activated at any moment. This is an imminent threat to our national security—and very much in the realm of possibility. We've all heard about the cyber-attacks on Home Depot and Target. And just about a year ago, even the federal government's personnel files were hacked, and the social security numbers and other details of high-ranking administrators and legislators were retrieved during that particular attack. These types of cyber-attacks are happening more and more frequently as time goes on.

Attacking our nation's power grid would have much the same effect as a HEMP or coronal mass ejections. Not only would people be without power; in addition, manufacturing and industry would come to a halt, distribution of hard and soft goods would be disrupted, the power needed to refine gasoline for transportation would be

eliminated, and emergency facilities such as hospitals would be out of business when their generators ran dry.

Given the interconnectedness of critical infrastructures with the rest of the country, this is certainly a high-probability event. And, there's really not much the average person can do about it, other than call their representatives in the House and Senate to push them to do what it takes to harden our country against these types of threats.

The point of this discussion is to make the public aware that while something "exotic," such as a HEMP, might never occur in our lifetimes, it's our dependence on everyday technology and conveniences that is our Achilles heel: Something as simple as a piece of software can undo the way we live just as easily as a nuclear detonation. It might not last as long, but it could still result in a high death toll and also cripple the country for years.

The lesson here is that no matter how well we think we are prepared, and no matter what we've steeled ourselves against, it's probably the little things we never think about that will be the biggest threats of all. **ASG**

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